

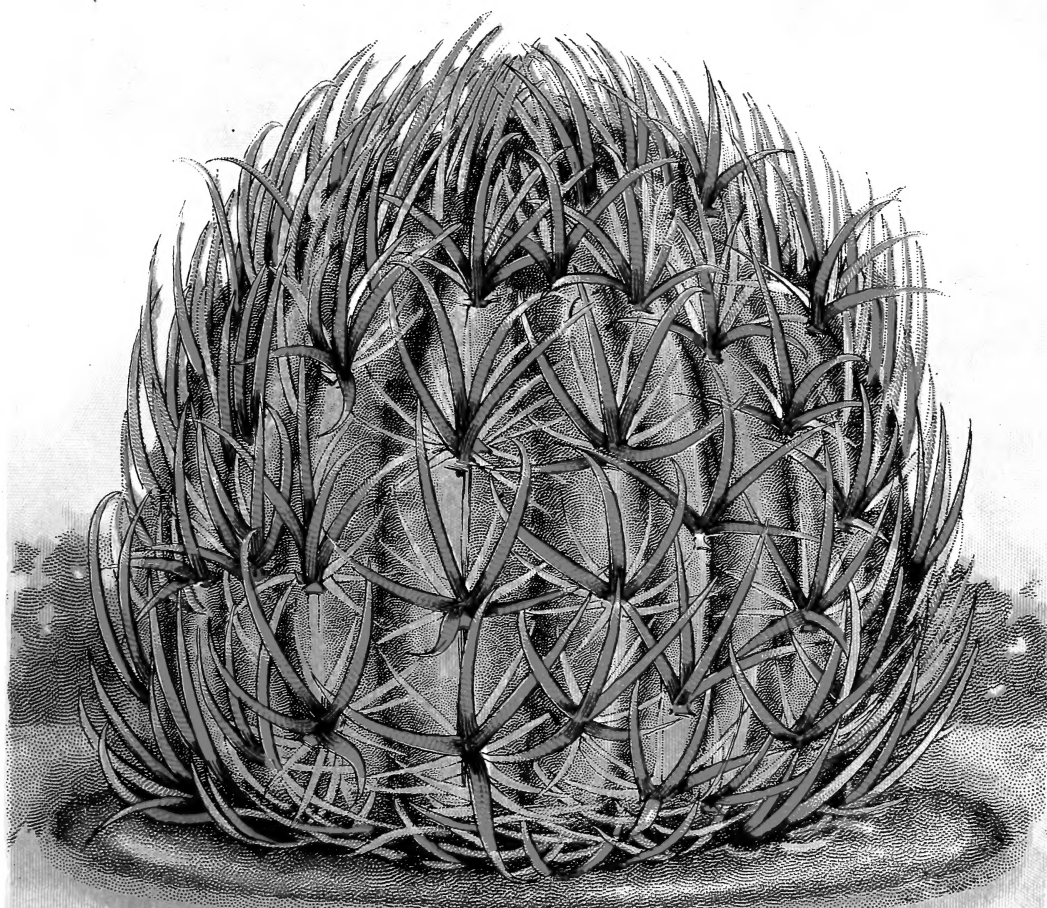
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Cactus culture

FOR AMATEURS

Department of Agriculture.



Echinocactus *Lecontei*

BY J. H. CALLANDER

SPRINGFIELD, OHIO.

Price, 25 Cents.

BEGINNERS' COLLECTION

10 Nice Rooted Cacti, postpaid for

\$1.00

Our
Selection
from
Surplus
Varieties
when
Order
is
Received



Often
Contains
Rare
and
Beautiful
Plants
of which
Stock
is large

To be prepared for our large trade, we are compelled to carry a large stock of many of the varieties most in demand. Sometimes we get too many, and those ordering this collection profit by it by getting a nice assortment, generally far in excess, in value, of the small sum sent. Nicely assorted, and correctly named, all different.

Address

THE CALLANDER CACTUS CO.

SPRINGFIELD, OHIO

A CACTUS MAGAZINE

Do you want one?

With the great revival of interest in the growing of Cacti within the last few years has come a desire for more knowledge on this extremely interesting subject. From every side inquiries for a book that will give something more definite to the student than he can gather from a mere catalogue have been received, with many requests for a magazine, to be published either monthly or quarterly. We have carefully considered the question, and, while we are quite willing to publish such a magazine, we do not feel sufficiently warranted in doing this without a general expression of willingness to support such a magazine from the Cactus fanciers of America. You are sufficiently interested to have written for our circulars, and perhaps to order our book or catalogue, but would you subscribe to a monthly magazine on Cacti, Succulents and Novelty Plants at 50 cents a year if one was started? It would take a subscription from every fancier in America to enable us to publish such a journal, as we would not send out a second-rate paper, but one worthy to be the organ of a specialty so well worth specializing. *We do not want your subscription now*, but ask you to simply write us a post card or letter, telling us what you think of it, and whether you would like to be one of our regular readers at 50 cents a year in case we should launch the paper. Further, as all Cactus lovers know of others who may be unknown to us, we will take it as a great favor if you will give us the names and addresses of all your Cactus loving friends. If you will do this in connection with an order, we will show our appreciation by adding some nice extra, either in an additional plant or extra value in the ones you order.

THE CALLANDER CACTUS CO.



INTRODUCTION



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THIS little treatise on Cacti, the strangest plant family known, has been undertaken, not because the writer wishes to pose as an authority on the subject, but in an endeavor to make plain some of the difficulties that face the amateur collector, and which have been brought to our notice both through experience (dearly bought sometimes) and the many letters of inquiry that come from our friends and customers everywhere. The writer is well aware that to try to untangle the hopeless maze in which the nomenclature of the Cacti family is at the present time would be beyond his powers, but the plants described in the following pages are given the names which are supported by the best English and American authorities on the subject, as well as by German students as far as possible. Writers on the subject differ widely on names of the same plant, and others, finding a slight difference of form in the spine nest, or in the shape of the seed, at once give the specimen a new name and one more variety has been added to a class. Many of these wonderful new introductions have been sent to the writer, but have not been found of sufficiently distinct character to warrant retaining the name in the list, and they have been dropped as it was found necessary.

The object of the descriptive part of the work is to describe as accurately as possible, in a few words, those that have prominently distinct features, and that are thus of interest to the ordinary fanciers. In the main, it is not desired by the amateur to have from two to six specimens so nearly alike that only a microscopic examination reveals the difference; such slightly differing species are only of interest to the close student who wishes to identify for himself the characteristics that have given a separate name to each specimen. What the average amateur wants, when he orders a new lot of plants, is something unlike anything he or she has ever had or seen perhaps, that they may have the true fancier's pleasure in getting personally acquainted with a new form.

With this in mind, then, the list of several hundred plants given here is selected, and the distinct characteristic of each is described. Exaggeration is carefully avoided, and where plant character is given not actually that as known to the writer by personal knowledge, such authorities as Dr. Engelmann, Prof. Coulter of the University of Chicago, Mr. Watson of Kew Gardens, England, C. R. Orcutt of California and several high authorities in Germany are quoted.

Regarding culture, no fixed rule could be laid down which would apply to the whole family of Cacti and Succulents, but the culture which has been the most successful in the treatment of each class will be given in the preface to each sub-division, and where a special treatment does well with any single species, such treatment will be given in the description of the plant.

Diseases and insects that trouble Cacti are sometimes stubborn enemies to combat,



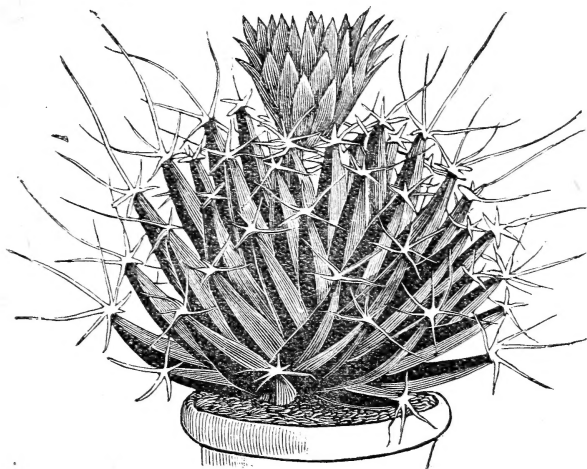
J. H. Callander.



One of Our Collectors Beside a Great Bunch of Fish-Hook Cactus.

but the benefit of several years' experimenting on the best way to meet the difficulty is cheerfully offered to our readers.

A word or two in explanation of the way in which the writer found himself engaged in the Cactus business might be given in conclusion. A real fancier and lover of the odd and curious in nature, as found so abundantly in the Cactus family, he found his collection rapidly assuming large proportions. Visitors were always glad to be given an offset or cutting from some specimen they admired, but in many of the rarer sorts this could not be done. To oblige fancier friends, it got to be a habit, when ordering any Cacti from a distance, to secure several of each sort, and then when a fancier wanted one, it was



Leuchtenbergia—Very Rare.

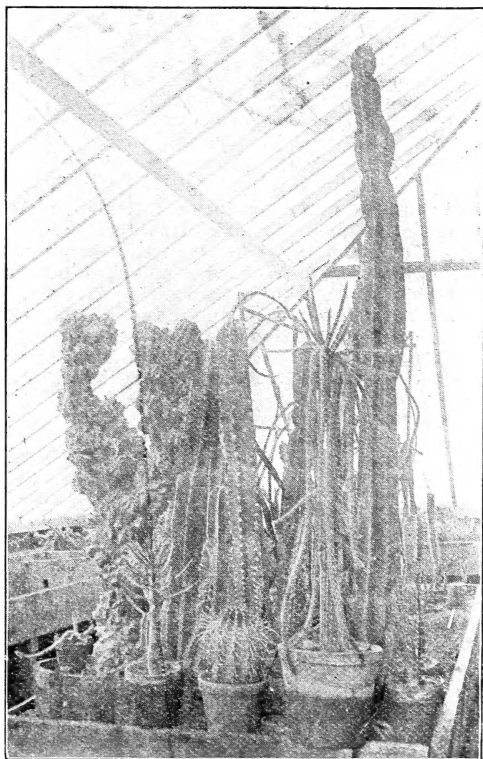
sold at a slight advance over cost. This gave the writer a selection of perhaps a half dozen plants to fill his own collection, and pleased his friends as well. The result was that quite an extensive conservatory had to be built to accommodate the stock which gradually gathered around. This again and again had to be enlarged, and finally an extensive greenhouse had to be built, and it was found necessary to advertise and issue a price-list, until the present extensive proportions have been reached, and the little collection which was a hobby a few years ago is now grown to a stock numbering over 600 varieties and of some sorts more than 1,000 plants are on hand all the time. While the stock is large

there are a few varieties that are rare but in great demand, and these are found very difficult to keep in stock in sufficient numbers to meet all calls, but our friends are asked to bear this in mind, and when ordering, always add some others as second choice if out of those wanted. As it sometimes takes a year from the time of ordering before our collectors find certain varieties and forward them to headquarters, it will not seem much matter for wonder that at times certain varieties run out of stock.

About a year ago, still another step of growth was necessitated by the volume of business that began to come for these curious plants, and The Callander Cactus Company, an incorporated company of the State of Ohio, was organized, and the catalogue issued by the new Company. At the present time this Company has again been strengthened, and is now in a position to handle its growing business better than ever, and to keep in touch with its collectors in all parts of the world, who are always on the lookout for new and interesting species of plants, which are at once shipped to headquarters and established in our extensive greenhouses at Springfield.

Finding ourselves, therefore, established in a pleasant and most interesting business, the main object will be to see that every order is filled with the best plants possible for the price, using every customer as a fancier friend, and striving to make our place of business the central distributing point, while all who have business dealings with us are invited to consider themselves as one of our circle of friends.

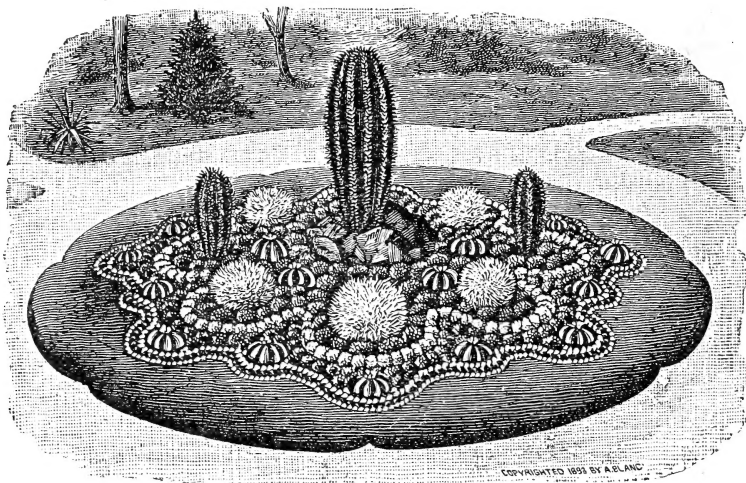
Yours faithfully,
J. H. CALLANDER.



Group in our First Greenhouse.

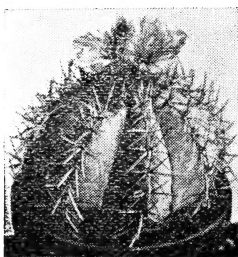
THE CACTI.

The interest in the growing of Cacti as decorative plants for the house and conservatory, has had several seasons of ups and downs. A few years ago there was great rivalry among fanciers, in the procuring of new varieties, and the fad grew to be a regular craze, just the same as comes to a stamp or coin collector, who never reaches the end of his desires in the acquiring of new (or old) specimens. This phase gradually died out and there was a lull in the Cactus collecting for a couple of years. In the last three years or so, however, there has been a very noticable revival of the interest taken in these wonderful creations of nature, and a steadily increasing demand for the plants as decorative specimens for both indoor and outdoor purposes. The splendid exhibit made by Mr. McDowell, of Mexico, at the Pan-American Exhibition showed what a very effective

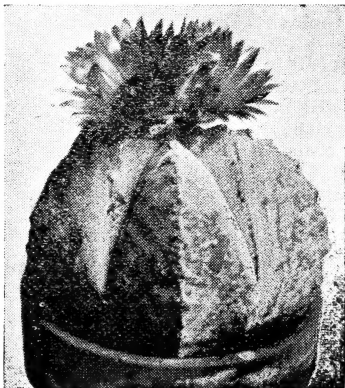


Cacti for Carpet Bedding.

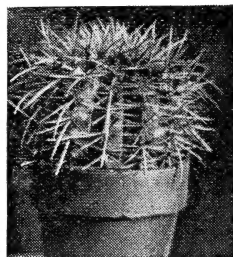
bed could be made outdoors, and also what a collection of oddities could be gathered together as an indoor exhibit, where the finer and rarer sorts were shown. Of late years too, the park managements, in the large cities, have added a Cactus collection to their stock, and in some cases a splendid bed has been set out in a conspicuous place in the summer, and a prominent position given the plants in the winter, with the result that private citizens of means have got a good collection together in many cases for their winter conservatories and summer gardens, as well as thousands who have started a collection in a small way in a window collection. The splendid effect obtained by bedding Cacti in the most exposed and driest of situations, has made their value come to be more



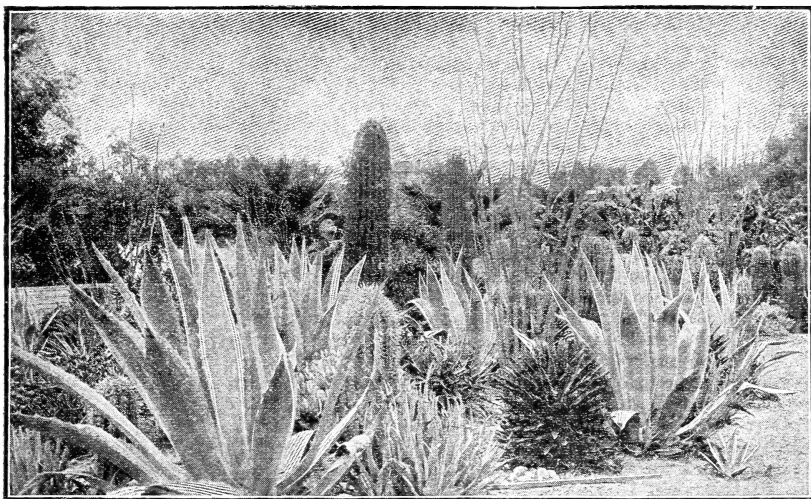
Nigger Head
Cactus.



A Myriostigma,
"The Bishop's Hood."



E. Grusoni,
Golden Gactus.

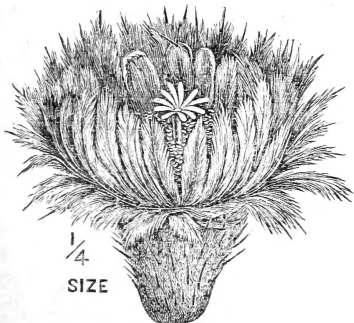


Cactus Bed in a California Park.

fully recognized than ever before. No barren, gravelly, sun-beaten spot, need be made richer or improved in any way to prepare it for the reception of a lot of bedding Cacti. Just such a spot as that is what they revel in and where they find the nearest natural conditions that suit them. On this kind of a location the hardy sorts of the Prickly Pear flourish and live out all the year round, and annually give an abundance of their beautiful wax-like flowers. With these hardy sorts, the tall columnar Cerei can be mixed in summer, while the globular Cacti as large as tubs, and grading down to the smallest little pincushion Cacti, also have their uses in making the bed attractive.

While this feature of Cactus growing is becoming more and more popular, there are hundreds of fanciers who grow them only in the window garden or conservatory, and in most cases with remarkable success. The dry atmosphere of a living room in a house instead of being detrimental to the growth of a Cactus, seems to just suit it, and provided it is not stinted of light it will generally do very well. The great trouble with many fanciers is that they use their plants too well, and keep them always, both winter and summer in growing condition. This is in opposition to nature's method, and is almost sure to result in no bloom when blooming season comes. They must have a long season of rest, for best results. In the fall, as growth ceases, water should be withheld and the plants allowed to stand until spring perfectly dry. They will shrivel up and look very wilted, but when warm spring sunshine comes, the very first sign of growth those half dead looking Cacti will make, will be the pushing out of an abundance of buds, and with

the development of the flower comes new growth and a full, fresh appearance again. This applies to the globular and heavy growing sorts of Cacti. While all Cacti will not do well in all situations, both sunny and shaded, yet there are Cacti suited to almost any position, where any other flower would grow and thrive. Those that require hot sun to make strong growth, must not be grown in the shade if good results and bloom are looked for, neither must the slender growing sort, that have their home in shady forests, be grown in the full glare of the hot summer sun. For all classes, the natural conditions must be followed out as nearly as possible, to give the plant a chance to develop properly. For instance, a globular Echinocactus may grow in a north window, but the growth will be weak and drawn up to a point, and such growth will not produce bloom; and again, a Phyllocactus



Flower of Echinocactus Texensis.

or Epiphyllum, given the same treatment will thrive and make a handsome specimen, giving bloom liberally. This book is intended to give cultural directions for all varieties listed as far as possible but it is obvious that for a class of plants that have their native

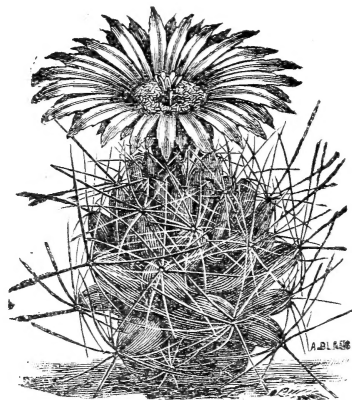
habitation from the burning sands of the desert to the snow line on the mountain top, and the damp evershaded South American forests, no fixed rule could be given that will apply to all.

There has been a lot of misconception, and stories wide of the mark, circulated about Cacti, and these reports have had the tendency to make many people fight shy of them without troubling themselves to verify or disprove the tales they have heard. Such information is volunteered as, that a Cactus only blooms every seven years, and must be seven years old before it will bloom. This might actually be a fact in the case of perhaps some of the globular Cacti grown from seed; but as a great many plants are started from cuttings it would be a great surprise to some of the wiseacres if they saw the little cutting, almost before it is rooted, send out buds and mature a beautiful flower; or little offsets rooted one season and grow, under favorable conditions, the next season sending out its share of beautiful flowers, just as the parent plant, and never thinking of waiting for the proverbial seven years.

Others tell you the spines fly off the Cacti and penetrate to the skin if you pass the plant any way closely, and that the prick of the spine is poisonous. This is another libel on the species, for though some of the Opuntias, for instance *O. Microdasys*, has tufts of myriads of tiny spines, that will adhere to anything that brushes them, they will not leave the plant of their own accord, and attack the skin of anyone approaching close

enough to admire the pretty yellow plant. Nor are the spines poisonous, for while the *Opuntia* spines are hard to get out, particularly the fine ones which are hard to see, and will fester if allowed to stay in just as any splinter or irritation of the kind would do; if the blood is in good condition there is not the slightest danger of any serious harm resulting. The writer has carried hundreds of the spines in the skin of his fingers, hands and arms, through constant handling of the plants, and has never been inconvenienced in the slightest degree by them.

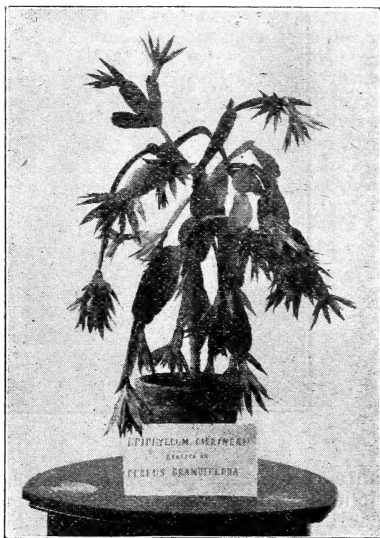
If this little book awakens interest in these curious plants, which are so tenacious of life under the most unfavorable surroundings, so well prepared to withstand extremes of heat or cold, as well as attacks of foraging animals,



M. Macomeris in Bloom.

so diverse in form, so odd a combination of beauty and ugliness, and so numerous a family, the writer will feel repaid. If by its simple cultural directions, fanciers are enabled to obtain better results in the growing of their Cactus collections, or to secure the much desired bloom that refuses to reward their present treatment, its object will have been attained.

Visitors to the Cactus houses in winter seldom fail to remark that the plants look very much wilted, and, as they think, unhealthy, while sometimes customers to whom plants are sent while in the dormant state, object to receiving them that way, and think they are in poor condition, when in reality they are in the finest possible condition for results in the way of bloom. It is then that care is needed to refrain from trying to force growth and bloom too soon, and many plants are ruined by overwatering in a mistaken idea that they must have water to revive them from their shriveled condition, and fill them out to their natural size. Cactus dealers have a comparatively new class of plants to handle, and in sending to their customers they usually put in full cultural directions in the package, which if followed will be found the safest rule to go by.



Epiphyllum Makoyana, grafted



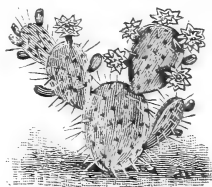
Living Rock, lives for years without water.

USES OF CACTI.

The uses to which Cacti are put are many. In countries where they are native they are the only vegetation that will survive the long seasons of drought that are so common to hot desert countries, and they then provide the only food for cattle that can be procured. With their spiny armor, they would defy the animals unassisted, but this difficulty is overcome by the ranchmen chopping off the branches and scorching off the spines by fire, after which they afford both food and drink to the beasts.

FOR FENCES.

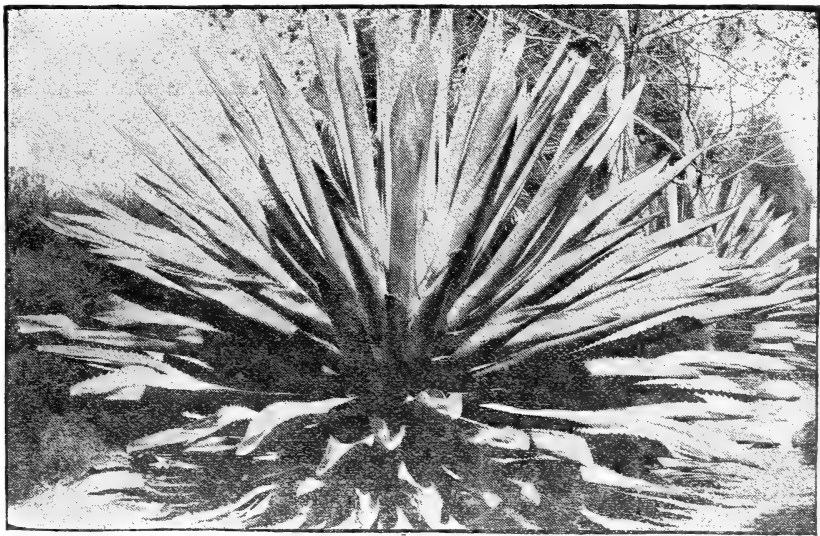
Their drought resistance and impenetrable growth are also made use of to provide animal-proof hedges that are quickly formed. With either the great, spreading Prickly Pear (*Opuntia Tuna*) or the pipe organ Cactus, *Cereus Gemmatus*, the same object is attained. For either, all that is necessary is to set the branches of the plant, slightly bedded in the soil, in a straight line, and in a remarkably short time roots will develop, and a living fence is started that in one season will make a growth sufficient to turn any animal but reptiles that crawl through small crevices.



Prickly Pear, Used as Food for Cattle.

AS MEDICINE.

Some varieties of Cacti are credited by the natives with valuable medicinal qualities, and this seems mostly to apply to those sorts that have tuberous roots, and it is the roots that drive away the ills that trouble the Indian. Some of the plants that have highly developed tuberous roots are *Cereus Tuberousus* and *Cereus Greggii*, also a number of the *Opuntia* family, and these are carefully gathered for future use whenever found. Some enterprising firms have tried to turn this belief into profit, and manufactured a preparation which has been put on the market as a specific for certain diseases, with what success is not known to the writer. Another plant, that has a peculiarity somewhat similar, is the Living Rock (*Anhalonium Fissuratum*), which it is claimed causes a mild species of drunkenness when eaten. In this connection might be mentioned the "Pulque," the natural drink of the Mexicans, which is made from the juice of the Century Plant (*Agave Americana*), and is a greenish, uninviting drink to the uninitiated.

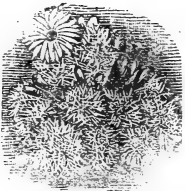


Agave Americana, the Century Plant, from which the "Pulque" is made.

It answers all the purposes, however, of northern whisky, and gives the Mexican what his northern brother inebriate would call a glorious drunk.

AS FOOD.

One great use to which the large globulous Cacti are put, is to provide a refreshing drink to the thirsty traveller crossing the desert. This is procured by cutting off the top



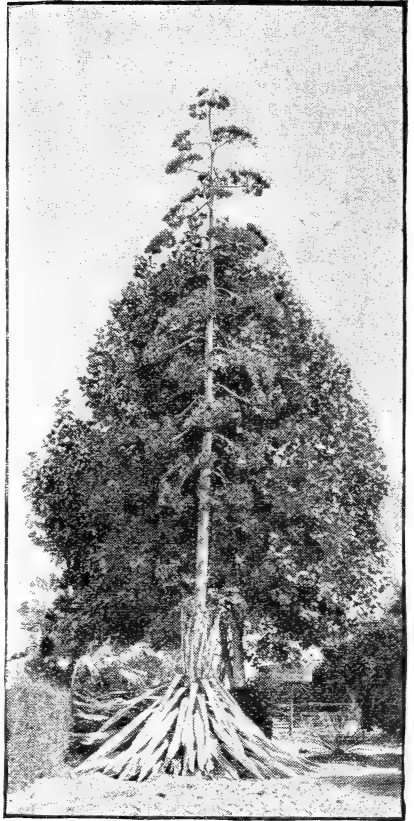
A little *Mamillaria* that bears edible seed pods.

and hollowing out the center, when the liquid soon gathers in quite a liberal quantity. The pulp in the center is also food that is not to be despised by any one unfortunate enough to become lost in the wilderness. As an article of food, however, it is the seed pods of the prickly pear and mamillarias that are principally used. When ripe, the larger prickly pears are sold for a penny a dozen in Mexican towns, and considered a delicious fruit, as indeed they are.

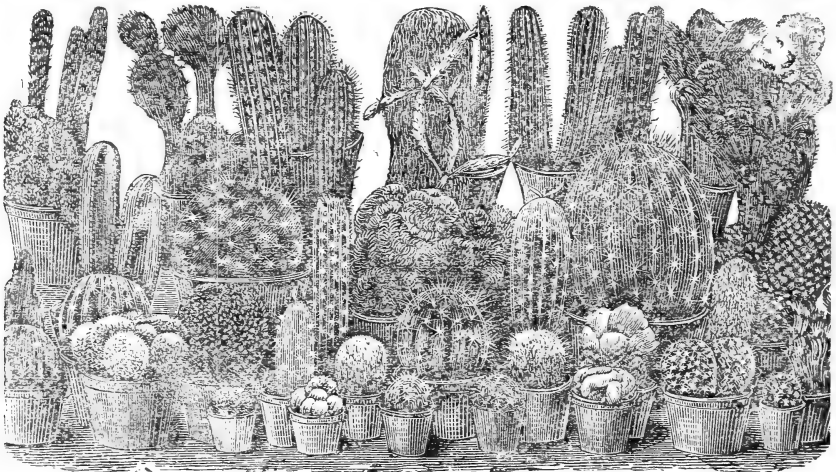
As most of them are covered with decidedly vicious spines, they are first peeled, an operation at which the natives are adepts, and then the seedy pulp, resembling a ripe gooseberry in appearance and flavor somewhat, is squeezed out, and swallowed with evident relish. The small ripe, berry-like seed pods of the mamillarias, particularly those that are red when ripe, are made into really excellent preserves, and also make a beautiful jelly. It will thus be seen that in a country where nature seems to be against the growth of other edible plants and fruit, these wonderful plants are a boon that is fully appreciated, not only as human food, but, as has been said in another place, as food for cattle.

WOOD AND FIBER.

A great many of the Cacti have a tough fiber, which, when the plant gets old, takes the form of wood. This fiber, when the plant is growing, is not hard and woody, being spread more or less through the plant and full of the pulp which forms the body of the stem. But as the plant dries up and the pulp disappears, the fiber contracts into a hard form and is at last like a hollow wooden branch, showing the grain running in a regularly twisted form, around symmetrically arranged holes, which correspond to the position formerly occupied



The Century Plant in Bloom.



A Collection of Rare Globular and Columnar Cacti. The tall *Ceri* have stout woody stems when very old.

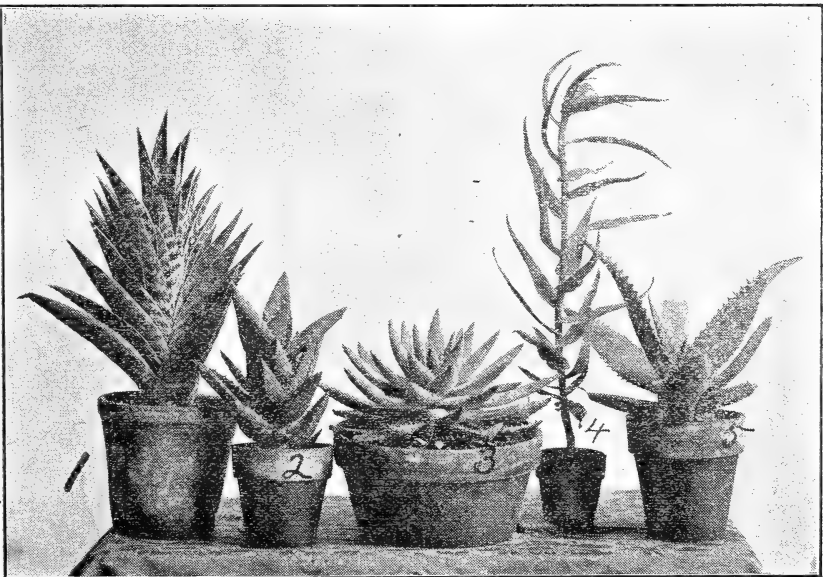


and becomes as woody as any of them, an crooked apple tree without leaves.

From the Agaves, or Century Plants, is obtained the most useful fiber of all, and it is from the *Agave Rigida* var *Sisalana* that the splendid fiber from which the sisal binder twine and rope are made, is obtained. One variety of fiber found plentifully is used as packing material, and takes the place of excelsior very well. In Florida the Agave is now extensively cultivated for its fiber, which has become a staple article of commerce.

One of the most wonderful plants in the world is the *Agave Americana*, or maguey, of Mexico, writes Arthur Inkersley, in the "World Today," for December. In the United States and Europe it is commonly called the "century plant," from a wholly erroneous idea that it blooms only once in a hundred years. It is a native of Mexico and grows to a great size in rocky or sandy soil, where nothing else flourishes. Its dark green, glossy, spiked leaves often reach to a height of fifteen or sixteen feet. It requires scarcely any

by the spine nests. This style of fiber is found in the cylindrical *Opuntias*, such as *Opuntias Arborescens*, *Lurida*, *Bigelowii*, etc., and in the upright growing columnar *Cerei*. From the wood of dead branches of the *Opuntias*, are made handsome walking canes and other small ornamental articles, while the wood of the Giant Cactus (*Cereus Giganteus*) is heavy enough to be cut up for firewood. From the woody stems of the great *Cereus* is made a very beautiful veneer, that is used in fancy decorations for various purposes. When the plant is fresh and green, the fiber can be cut through quite easily, but when it has become dried it is extremely hard and close in the grain, and requires a sharp tool to cut it. The flat-leaved *Opuntias*, when young, do not have so much fiber as the slender stemmed plants, but if allowed to decay and left till all the pulp has dried up, a delicate lace-like network of fiber will be left that is very pretty. However, when the plant gets old, the main stem rounds out in form, old plant at a distance looking not unlike a



Some Choice Aloes — 1. *A. Variegata*. 2. *A. Mitraeformis*. 3. *A. Brevifolius*. 4. *A. Citiris*. 5. *A. Grandidentata*.

cultivation. On reaching maturity, the maguey throws up a slender stalk from twenty to twenty-five feet high and bearing at the top a great mass of white flowers. This splendid flower-growth is the supreme effort of the plant, which exhausts its strength and thereafter withers and dies.

In Mexico, especially on the plains near the capital city, there are enormous plantations of magueys, set out in long rows that stretch away for miles. On these plantations



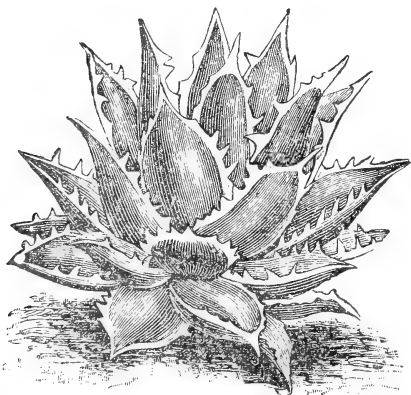
Aloe Variegata. From Aloes comes the bitter aloes of commerce.

woven into ropes and matting. Indeed, the maguey is as serviceable to the poor Mexican as the bamboo to the Japanese or the cocoanut to the South Sea Islander.

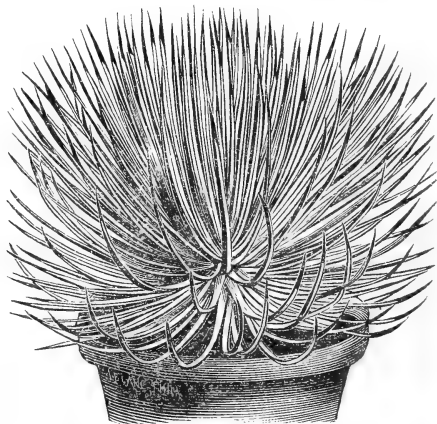
Besides all these practical uses for Cacti, there is the use which they are put to as decorative plants for the conservatory, lawn and window garden, and this phase is of late years becoming an important one. Besides the large collections which are to be found at many of the large parks, there are many private collections that now reach extensive proportions, and the demand is steadily growing.

From the Aloes, a very watery stemmed plant in the style of the Agaves, is made the bitter aloes of commerce. They are not Cacti, but from the fact that similar treatment suits them, they are usually grouped with them. Many of them are exceedingly ornamental, showing beautiful markings and growing in a handsome shape.

The Agaves also are extremely ornamental and extra fine for use in bedding out for massive tropical effect in summer. Given a loose, rich soil, they make a very rapid growth and the effect is a most satisfactory one. In the fall they can be lifted and simply set upright on the floor of a cellar where they will have a little light, and they will not require any water or attention till spring. By setting them out every season in this way a little offset of a few inches in height is, in three years, converted into an immense, strong leaved plant, the admiration of all who see it.



Agave Americana Variegata.

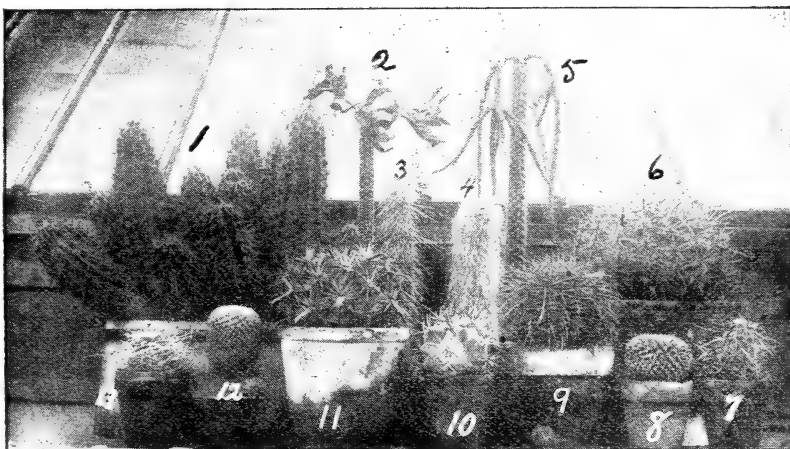


Agave Stricta.

GENERAL CULTIVATION.

It is only by observing the conditions under which Cacti are found growing in their native homes, that we learn the treatment that is likely to be best for them. Nearly all the Cacti are found in America, from as far north as Manitoba and the Northwest Territories, to almost the southern extremity of South America. In their northern haunts the writer has seen large clusters of *Mamillaria Montana*, after a winter when the thermometer often fell to 50 degrees below zero, with such an abundance of beautiful carmine bloom that the plant was almost hidden. There they grow on the sides of the sand hills, along the northern bank of the Souris River, and are very abundant. They get no sustenance from the soil, as the hills are pure sand, forever being shifted about by the wind, and only a straggling sort of wiry grass struggles for existence beside the Cactus. There is also an *Opuntia*, very much like *O. Missouriensis* found on these hills but not abundant.

From here to the line running through Kansas, Colorado and Utah, the Cacti that are found are hardy, and are useful for permanent beds in gravelly, sunny situations where nothing else will do well. They include a few *Mamillarias* and quite a number of *Opuntias*, which in the descriptions following will be marked (hardy). To make a suitable bed for the hardy Cacti, it would be better to raise it somewhat above the level of the ground, and a stone wall about one foot high will be found the most durable and satisfactory way of shaping the bed. Indeed it might be a solid stone pile, of one foot in height, and a good sandy soil thrown on to fill the crevices. There would be abun-



A Well Grown Collection.

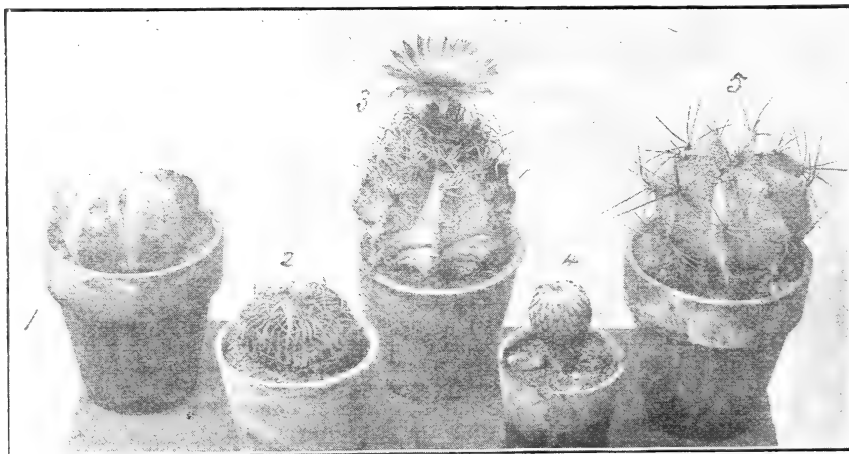
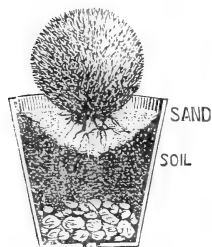
dant drainage, and in winter water would not gather and enclose the plants in solid ice. Grown in the open air, and left out all the time, the growth is strong, and bloom more abundant than on conservatory grown plants. On such a bed, the Cacti can be watered freely in the growing season, and they will make a surprising amount of growth in one summer, and prove a really attractive part of the garden, though set out with only the most common sorts.

Getting farther South in the Texas, Arizona, California and Mexico district, we find the greatest variety, the finest specimens, and the rarest sorts found anywhere in the world. They are met with on fields that are covered with great boulders and rocks, so that often a big globular Cactus seems to be sitting on two or three stones, and its few roots extending into the gravelly soil. Some of the larger specimens, when received, are shaped like a wedge, showing where the rocks have kept their bases compressed, and held the big plant, perhaps for a century completely above what little pretense of soil there was below them. Others are found in the hot, sandy deserts where they sometimes have to support life without rain for a year or two, and are obliged to use up the moisture that is stored within themselves. It will easily be seen, when taking these conditions into consideration, that the Cacti found in the tropical countries do not luxuriate in such rich soil as is necessary to the geranium or other house plants, but endure conditions that would easily correspond to the most aggravated neglect we could give them

when transported to our northern conservatories. For most of the big globular Cacti' counting in the Mamillarias and Echinocacti, a very coarse sand or almost gravel is the safest thing to have the plant itself sit on, while the roots may extend into a soil made of one-half coarse sand and one-half light garden soil, as is shown very clearly in the illustration. In this district is also found the giant among Cacti, *Cereus Giganteus*, and it does well planted in just such a way as that given for the big globular Cacti. Growing near these is found another class which are as hard to treat successfully as any Cactus kept from year to year, by the writer. They are the *Echinocereus*, the branch that seems to be midway between a *Cereus* and an *Echinocactus*. While some of these are quite easy to manage, enduring water freely applied in growing season, others seem to object to too much moisture around the roots, and to develop a rapid rot very easily, and in a most discouraging way. The only way discovered to successfully combat this tendency is to put these sensitive ones in a spot by themselves and be very careful not to

give them too much water. Of all the Cacti they are the ones that most especially must be kept absolutely dry all winter, and if this is done, no other family will reward the grower with such an abundance of extra fine bloom as these rather homely looking plants. In the writer's greenhouse this is the plan followed, and though the stems of the plants become very much shrunken and wrinkled, the very first sign of life in spring is the bursting out of buds so thickly that soon the large clumps of *Enneacanthus*, *Polyacanthus*, *Engelmanni*, *Coespitosus*, *Berlandieri*, *Candicans*, *Dasyacanthus*, *Chloranthus*, *Viridiflorus*, etc., are such a mass of bloom in all shades of red, pink, purple, yellow and green, that the plants are almost hidden. In parts of the mountainous country where there is a large percentage of lime in the soil, a few plants seem to be found that are specially adapted to such a situation. These are the *Pilocereus* family, which include the "Old Man" Cactus, *P. C. Senilis*. For these it is best to add some lime in some form to the sand on which the plants are set, in the way of old broken plaster or air slacked lime. Possibly crushed oyster shells would answer, as they are largely composed of lime, and can be easily procured wherever there is a poultry supply house.

The *Opuntia Ursina* seems to be nearly allied to the *Pilocereus*, at least the same conditions are required to grow it successfully, and it has the long hair like spines, almost as plentiful as the genuine "Old Man." The writer has a large mass of this plant, and after several years of study of its habits has at last, on the suggestion of a California lady, planted it in a mixture of one-third coarse sand, one-third old plaster and one-third crushed stone. In this unpromising compost, and set in the dryest corner of the greenhouse, kept without more than a light surface spraying of water the year round, this queer plant is now luxuriating. Before, in the soil commonly used for *Opuntias*, this plant would grow finely for a year or so, and then rot off at the base, the first warning of its condition being given when the plant fell over on its side. This dry treatment in



Five Rare Ones — 1. *A. Myriostigma* 2. *E. Crispatus*, 3. *A. Capricornis*.
4. *P. Asseliformis*. 5. *A. Ornatus* Mirbelli.

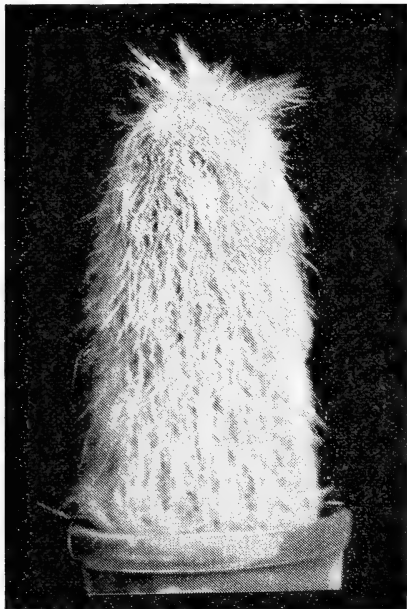
winter applies to the globular varieties, and the clustering *Echinocereus*, but the slender, branching *Opuntias*, like *Frutescens*, *Arborescens*, *Lurida*, etc., can safely be given water freely, though more so in the growing season, in fact almost all *Opuntias* will stand a lot of water when making growth, if in well drained soil.

Getting farther south into South America, we find *Cacti* growing under quite different conditions, some being found in an almost perpetually moist atmosphere. On the Island of Jamaica, which has one of the most moist climates to be found anywhere owing to its position near the Gulf Stream, the climbing *Cereus* grows to perfection, and covers the trunks and branches of trees in a death-dealing embrace, becoming at length so thick as to exclude air from the tree, which falls a victim to the creeper to which it has given support.

On the Amazon, in Brazil, where rain falls almost continually at some seasons of the year, the *Phollocacti* and *Epiphyllums* have their home. They do not grow in soil as they are cultivated, but have their roots in masses of moss on tree trunks and fallen logs, so that though constantly wet the water runs off without standing on the roots, and the conditions appear to suit these popular plants admirably.

To meet these conditions in the conservatory, partial shade may be supplied to these plants, and if then fastened to lumps of peat the roots will take hold of it, and the plant appears to thrive wonderfully, enduring a daily watering quite safely. For a majority of amateurs these conditions are not procurable, and it is then best to graft the *Phyllocacti*, *Epiphyllums* and *Rhipsalis* on a strong growing stock that is not too particular on the moisture question, such as *Cereus Nycticalus*, *Colubrinus*, *Splendens*, *Triangularis*, or *Pereskia*, when a fine plant is soon obtained.

When the *Phyllocacti* are grown in soil, they should never be allowed to become dry, but the water must be given very sparingly in winter, only when needed to keep a slight moisture around the roots. The *Cerei* are, in general, easy to manage, not being particular



P. Seniliis, Old Man Cactus.

as to conditions, thriving if kept reasonably well supplied with water, and not appearing to suffer if water is withheld for long periods. As with other classes, however, if bloom is looked for the resting season must be respected, and if the fancier will simply forget his plants for three months, the result will perhaps prove a surprise.

Dr. F. Kornmann, of Baltimore, used charcoal to root cuttings, but says: "Some of the charcoal which I have been using has become so foul that mould grew in it. Another objection is, it is very porous and absorbs a large quantity of water, thereby keeping too much moisture around the base of the cutting and making it liable to rot. Now these conditions do not exist in sand—if your sand is free from any decomposing organic matter, either animal or vegetable—and it is washed to free it from clay, which all sand usually contains, in larger or smaller quantity, the excess of water will always flow away very rapidly if the drainage is properly attended to, and the sand not being of a porous nature, it cannot absorb any gaseous matter or the products of decomposition from the atmosphere; hence it cannot become foul or stagnant. Sand which I have been using for one year is today in as pure a condition as when first used. Now a word as to selecting your cuttings: Always select a good healthy growth, as large as you can, preferring to cut the whole growth, that is, just where it has grown out of the body of the plant or parent growth, because there the base is completely covered with epidermis, except the mid-rib, and is not so liable to rot as if cut through the body of the growth, thereby exposing the fleshy part of the plant, which is more liable to rot than if covered with epidermis. The epidermis or skin of a plant is provided by nature to protect it against outside influence, hence it is but natural that a plant or part thereof covered by epidermis is not so liable to decay as when exposed. I do not mean to say that a cutting which is cut through the body of the growth will not grow; it will, but greater precaution to have it thoroughly dried off at the base is necessary; nor will it stand as much watering as a cutting which is protected with epidermis. The reason I say select as large a cutting as possible, is because a large cutting will develop into a fine, large specimen much sooner than a small cutting."

GROWING FROM SEED.

It seems incredible that, in the arid, dry regions where Cacti abound, reproduction from seed could take place, but that is the way a large number of the species are propagated. The seeds are tiny atoms in most cases, sometimes as fine as fine sand, and ranging from that to about the size of a flax seed, or round like the mustard seed. Dropped in the shelter of the parent plant, the little seeds lie dormant till the first rain, perhaps for months, when a rapid germination takes place, the old Cactus shading the minute seedlings and preventing the sun's searching rays from drying up and consuming the small store of moisture contained in the struggling little plant. For the first season under these conditions, a globular Cactus of the *Mamillaria*, *Echinocactus* or *Echinocereus* varieties, will perhaps attain the size of a grain of wheat or field pea, and will commence to show the character spines very prettily. Seen by the aid of a magnifying glass, the growth of these morsels of plant life is very interesting to watch, as the spine nests of hair-like fineness are slowly formed.

To give the Cactus seed a rather more favorable condition than it finds naturally, a

good way is to use a shallow box, say four inches deep. Put about an inch and a half of clear sand in the bottom, and in this bed sow the seed, barely covering it. Lay a light layer of Spanish moss, or some such material, over the seed to provide the shade, and cover the box with a pane of glass. Water carefully, so as not to disturb the seed, and set in the sun to secure the necessary heat. Very soon a lot of little green balls will appear upon the surface, very slightly held in place by an exceedingly slender single root, and the Cacti have started growth. For the first season they need not be disturbed, but given a moderate amount of water and all the heat possible, while still retaining the shade of the moss. Towards fall gradually reduce the water supply and remove the moss, and the little plants will winter over in a partially resting condition. In the spring, again give good sun heat, and when



growth shows the plants may be pricked out, either into thumb pots or at about an inch apart in a shallow flat, and given about the same treatment as the rest of the Cacti in the collection, not allowing the seedlings to entirely dry out. If growth seems to stop, a light shade, such as a whitened glass laid over the flat, or the moss laid on lightly, may be found beneficial. This treatment answers admirably for all varieties, but particularly the globular sorts. For *Opuntias* and *Cerei*, which make much more rapid growth, the only difference required is to provide more room, and shade is less important. A slender, growing *Opuntia* will make a plant nearly a foot high in the first season, while the flat-leaved varieties will be from two to three inches high. While the growth of a Cactus seedling is most interesting to watch, there is also the probability that the plant will be entirely different from the parent plant, due to natural hybridization, and thus new varieties, often very pretty, are grown in this way. A small corner of the Cactus window garden or conservatory should be devoted to this phase of Cactus growing.

PROPAGATING ECHEVERIAS.—"As soon as the seed is ripe, prepare to sow it. Fill some four-inch pots or pans to one-fourth inch of the rim with equal proportions of leaf-mould and well sanded loam. Make the surface very firm, and water the soil so that the whole body of it becomes thoroughly moistened. Having allowed the moisture to drain away, scatter the seed thinly, and cover it with silver sand; place the pot in a close frame or box, cover with a pane of glass and shade it somewhat. The seed will germinate before the soil can dry, and if it is sown as soon as it is ripe, every seed will come up. As soon as the seedlings are large enough to handle, pick them out thinly into pans or six-inch pots. Keep them close until they are fairly established, and then allow them the full benefit of sun and air. After the middle of September give no water, and be careful to remove all decay as soon as perceived. If planted out early in April in well-worked and fairly enriched soil, these little plants will make good strong plants by autumn."—*Mr. Carroll, Baltimore.*

GRAFTING.

Grafting Cacti has come to be recognized as the best means by which certain desirable ends may be obtained, and is much practised by fanciers who are making a careful study of their curious and truly wonderful specimens of this strange branch of nature. The main object of grafting is to procure a quicker growth and to improve and increase the bloom. To this end the stoutest and most rapid growing species are selected as stocks on which to graft the slower growing and more slender varieties. But the operation is also performed to preserve some tender, rare sort that is rather susceptible to water, and if left growing on its own roots, might develop a rot that would soon rob the collector of a valued specimen, but which, if securely grafted on a strong stem of *Cereus*, is safe from such accident. Still another object of grafting, and one that is in great

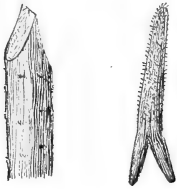


FIG. b.
SADDLE -
GRAFTING.

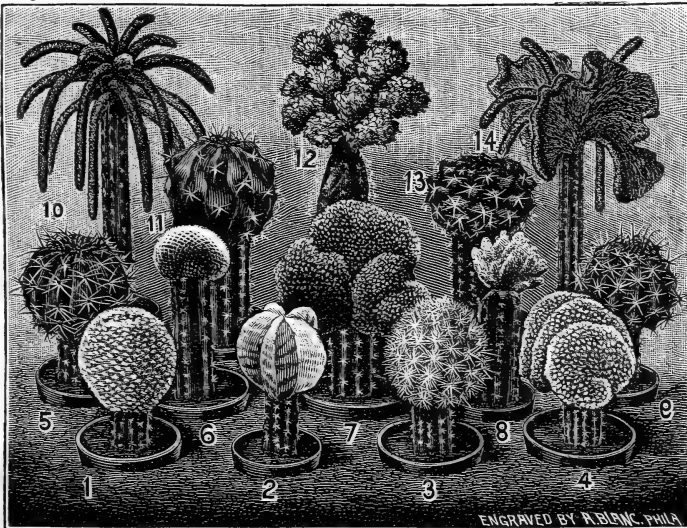


FIG a. WEDGE -GRAFTING.

favor where the collection is a large one, is the producing of as great a curiosity as possible by grafting as many different sorts as can be crowded upon one stem or cluster, in which way a seemingly great freak is often the result.

While all these effects are looked for by the experimenter, by far the greatest percentage of grafting done is the putting of *Epiphyllum* scions on *Pereskia* stock. European growers with plenty of room at their disposal have achieved remarkable success with these plants, using large, heavy stalks of *Pereskia* several feet high and grafting

the *Epiphyllum Russelianum* or *Truncatum* on it in tiers one above the other. The result has been a pyramid which, when in full bloom, makes a gorgeous display and is much admired. The grafting of the *Epiphyllum* on *Pereskia* is very simple, and is done by splitting the stock and cutting the scion to a wedge shape. Then insert the wedge and hold in place by running a Cactus spine through in one or two places. To keep the cut edges firmly together a split stick put on carefully like a clothes-pin at the outer end of the

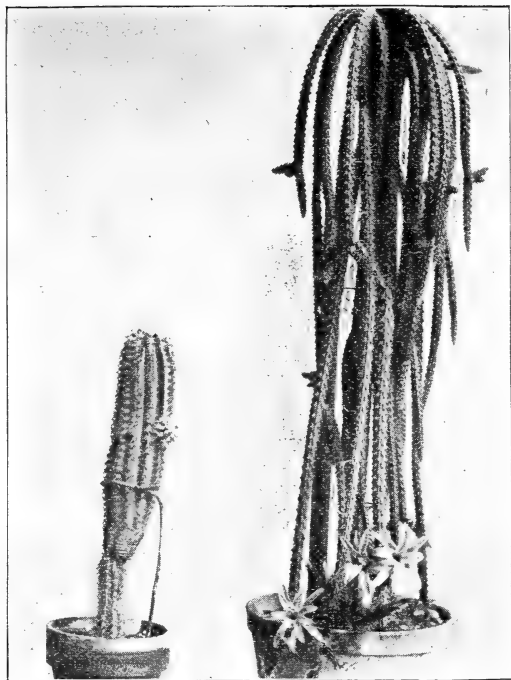


Group of Grafted Cacti.

junction, will be found all that is necessary. This should not be put on tight enough to hurt the plant, but just enough to keep the split from opening and need only be left on for four or five days, as a perfect union should take place in that time. All growth that shows on the *Pereskia* stock should be picked off so that full strength may be driven into the new graft, and once growth gets well started there will not be much trouble in that direction. Another combination that is much in favor is that of *Cereus Flagelliformis* on

Cereus Colubrius, *Cereus Nycticalus* or *Pereskia*. The *C. Flagelliformis* being a drooping plant, by having its head held up two or more feet, a fine specimen is obtained that can be set anywhere, while a plant on its own roots requires room to hang over, and is better grown in a hanging basket. The grafting is just as simple as for *Epiphyllums* and *Pereskias*, and if anything is easier. Either the stock or the scion may be cut to the wedge shape, and two or more small pieces may be put on one stock. This also unites very quickly and growth begins almost at once. The *Cereus Tuberosus* is another good one to graft on a stronger growing *Cereus*, and as it grows upright, a shorter stock may be used than for the Rat-tail or *Cereus Flagelliformis*. It is sometimes put on a strong young plant of an *Opuntia*, but it does not give as good a result as when grafted on a *Cereus*. A six-inch stem of *Cereus Triangularis*, *Nycticalus*, or *McDonaldii*, will be found excellent for a stock to put this pretty and satisfactory sort on.

With all the slender varieties, the wedge grafting is the best plan, but when a globular sort is put on a stout stemmed *Cereus*, the simplest way is to cut the base of the scion square off, and also the top of the stock. Place the two cut edges together and fasten by running two or three spines through



C. *Flagelliformis* and E. *Coespitosus*, grafted.

the edges, and tie on firmly with twine to hold securely in place. If thought best the top of the stock may be cut into a cone shape and fitted carefully into a hole in the base of the scion, fastening and tying, as in the other case. Grafting is much used to increase the stock of cristates and monstrosities, always in greater demand than the supply. As a small piece of a cristate will continue to grow in its contorted form, but on its own roots would be a long time coming to a desirable size, it is best to graft it upon a vigorous growing stock, when it quickly reaches nice proportions. A collection of grafted plants is very curious and a source of unfailing interest as their growth develops.

Much has been written, says J. A. McDowell, of Mexico, about the kind of soil best suited for cactaceous plants. Mr. John W. Singer, now president of the National Cactus Society of England, in his lecture delivered last year before the Royal Horticultural Society, makes an able review of the different composts employed by the best scientific cultivators in Europe.

Speaking of Monsieur Rebut, "he gets the compost earth of a meadow, well powdered; also leaf-mould and manure from the bottom of a dung heap at least two years old, this also well powdered; earth or dirt from the road, especially that from deep ruts; earth from old willow trees and oak trees. This collection of material is put in a heap and allowed to stay a long time, occasionally stirring to promote decomposition. It is then to be sifted before using, mixing it with fine sand as may be required. He would then water once a month."

While appropriate soil is very essential, still too much stress cannot be laid on the important fact that cacti delight in sun and air. Amateurs must imitate the conditions in which plants grow at home, the same as orchid cultivators create different temperatures for their plants. Fortunately for lovers of cacti, their "pets" are not so particular as to temperature, many standing equally well 100 degrees as also slight freezing.

HARDY CACTI.

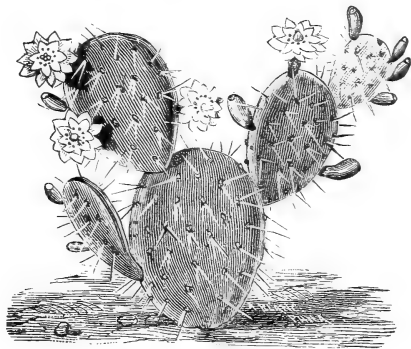
The generally accepted opinion regarding Cacti seems to be that they are tender plants from the tropics, and must be very carefully protected from frost. While this is true of some varieties, the majority of them will stand much more cold than is supposed, as, while they are natives of the hot countries, it is the rocky, mountainous section that they inhabit, and that, too, quite often almost at the snow line. Necessarily, they are subjected to both extremes of heat and cold, and without injury to them in the least. It is the varieties that are found on the hot, level plains that are tender when exposed to the climate of the North. The tender sorts are the *Cerei*, which are not found north of a line running across the upper edge of Mexico and extending upward into Arizona, crossing the Rockies at about Death Valley in California, and from thence to San Diego on the coast. Up to a short time ago the Cactus fancier had no knowledge of which of his treasured Cacti were hardy and which required shelter from frost, so kept all in the conservatory window, or at least carried them into the cellar for winter if bedded out during the summer. They would gladly have known the hardy from the tender, but did not care to subject their valued collection to the test of exposing them to an unprotected winter out of doors in order to gain the desired knowledge, so had to care for all in the same old way.

It has lately been discovered that though Cacti have not been found growing wild in the Eastern states, there are a number of really good varieties that will luxuriate anywhere in the United States and most of Canada, growing and blooming in the most exposed situations, and asking no better spot to take root in than some gravelly, stony knoll, where no other vegetation could exist, much less revel in, and yield an annual display of gorgeous flowers that delight the eye. It is no longer in the experimental stage, the growing of Hardy Cacti for permanent outdoor beds, as many of our parks have tried Hardy Cacti to beautify barren spots that had seemed hopeless problems previous to that time. On some gravelly side hills, with a southern exposure, where shrubs and grass would be burnt up long before they could establish themselves, the Cacti find their natural conditions in perfection. Here they thrive and grow, bloom and seed, and when cold weather in the fall warns them of coming frosts, they make a graceful retreat, and go into winter retirement, becoming so shrunken and reduced as to seem about ready to be dug up and thrown on the rubbish pile. The fresh green color changes to a sunburnt looking purple, and the abundant store of juices that kept the tough skin filled out plump and smooth all summer seems to have all been used up, leaving the Cactus in its dormant state and ready to take its winter rest. In this way nature's plan has been followed, and its results are sure to be an abundance of bloom the next season, the safety of the plants in the coldest weather, and a chance for the gardener to watch a rapid and wonderful change as the warm weather of spring awakens the sleeping Cacti to another season of life, beauty and usefulness in giving an otherwise useless spot of ground a carpet of green as well as a liberal display of unexpectedly handsome flowers.

As soon as this phase of Cactus growing becomes better known, there is likely to be a great demand for the hardy varieties, and no fear need be felt of their ability to take care of themselves, as the writer has seen the little *Mamillaria Montana* and *Opuntia Missouriensis* growing and doing well in the Canadian Northwest, where the temperature varies from 100° in the shade in summer to 40° below zero in winter, and there they revive each spring after a long hard winter and bloom as freely as if growing 4,000 miles farther south. It is mostly *Opuntias* in several sorts that are used in the hardy beds, and their flowers are for the most part yellow, with a few showing a red or pink center shading to yellow on the outer edges.

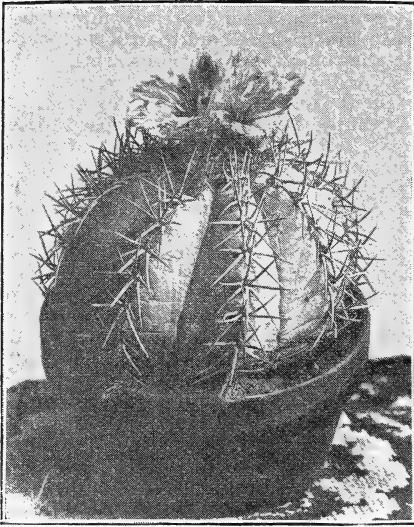


O. *Brachyarthra*.



O. *Missouriensis*.

DISEASES.



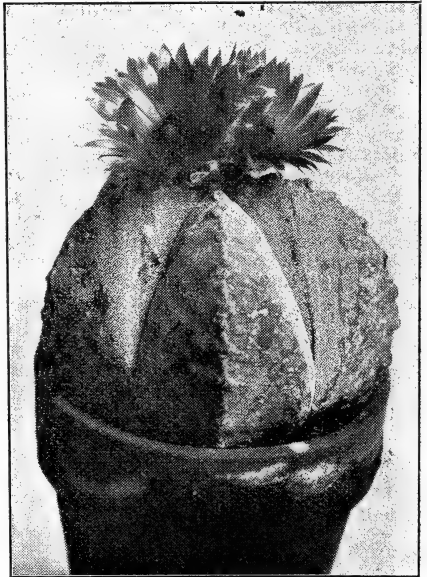
E. Horizontalonius.

claim to know it all. The only way to combat the rot in a Cactus is to cut off the plant along the diseased part, rub with slacked lime and lay in the sun for a few days to dry, after which the piece may be rooted and grown on as before, only a little shorter. Spots of rot which appear on the sides of the plant above the soil, can only be attributed to weak unnatural growth and too much moisture stored up within the plant. It should be cut out as soon as noticed.

Mr. W. Watson, curator of Kew Gardens, England, in his work on Cacti says: "The cause of this decay at the base or in the side of the stems of Cactuses, is no doubt debility, which is the result of the absence of some necessary condition when the plants are cultivated in houses or windows in this country." This condition is probably more common to the Cacti grown in the moist climate of England than it would be in the dry air of America, the natural home of most of the species. Many complaints have been made to the writer, of *Epiphyllums* dropping their branches, but not having had this trouble to combat, he does not feel competent to give an opinion on the matter. It would appear to him that probably the plants had been allowed to dry out too much, which is not good for this class of Cacti, as it makes its growth in summer and blooms in winter.

Cuttings taken off for propagation and set too soon in sand to root, are very likely to start to rot, and if not noticed at once, the rot will quickly extend to the whole cutting. As soon as seen, cut off a little above the rot, and dip the cut surface in slaked lime or powdered charcoal.

Cacti are extremely free from disease unless given too much mistaken kindness in their general treatment. A Cactus may look very thrifty and in apparently the best of condition, when all at once, and seemingly with the same treatment it has been receiving all along, it develops a bad case of rot at the base, and in a few days is nothing but a green shell, full of rotten pulp. It is hard to determine the cause of this sudden change in affairs, but it is the opinion of the writer that in most cases the reason may be found in the probable fact that too rich a soil has been used and too much moisture given. If put in a good rich soil a Cactus, especially of the globular sort, will make a very rapid growth, but weak and unnatural, however it may appear, and with an oversupply of water a rot starts which goes through the entire plant in a very short time and almost before its appearance is noticed the plant is dead. To guard against this evil, careful attention to the cultural conditions given for each class in the descriptions following will be found of benefit, as they embody the past years' experience and study of the writer, who has had a fair measure of success in treating the Cacti, though far from the point where he can



A. Myriostigma.

INSECTS.



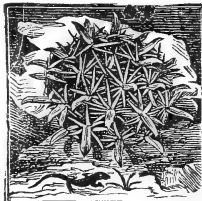
Mam. Elephantidens.

As a general thing, Cacti are quite free from insect pests, or, if troubled, are easily rid of their enemies with the exception of scale, which sometimes is on the plant when found in its natural home. The most common insect is the mealy bug, easily recognized by its resemblance to a little ball of fine white wool or cotton. They gather in the joints of plants, around the roots or amongst the thickest nests of spines where they are out of sight and hard to get at. They do not eat the plant, but suck its juices and gradually sap away the life of the plant until it has a sickly appearance and growth is retarded or unhealthy. Several remedies are recommended. Mr. Watson advocates the use of paraffin oil in the proportion of a wineglassful of the oil to a gallon of soft water and about 2 ounces of soft soap, the whole to be thoroughly mixed by frequent stirring. Apply with a syringe or sprayer, using as much force as possible so as to penetrate the outer woolly covering under which the insect works.

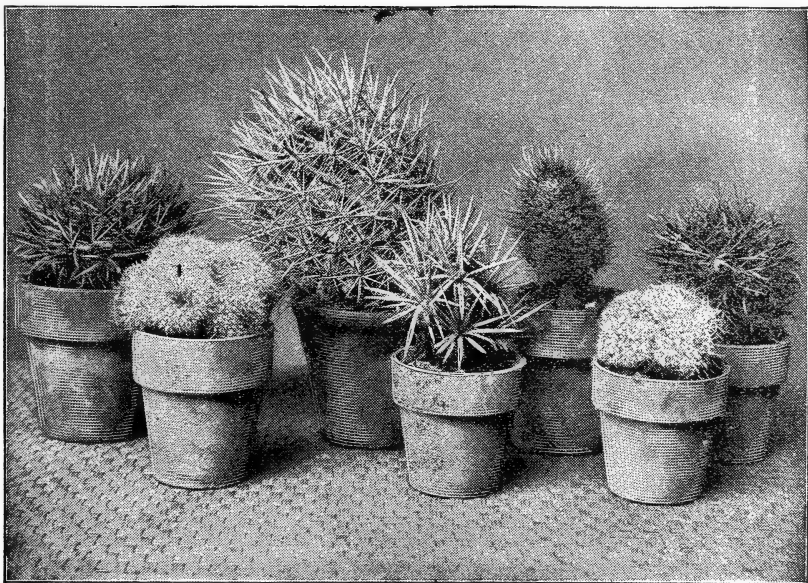
Kerosene emulsion is also one of the best remedies and will give good results in treating any insects that infest Cacti, if not applied too strong. While the Cactus is not easily injured by such applications, it is as well to be careful, as a burnt spot on a plant of this kind is on to stay. A very simple kerosene emulsion is quickly made by mixing one tablespoonful of kerosene to one-half teacupful of milk; stir rapidly and add to two gallons of water. This is quite safe to use if thoroughly mixed.

Still another remedy is wood alcohol to one quart of which has been added a tablespoonful of lemon oil or fir tree oil. This is easiest applied with an atomizer, and is a sure mealy-bug finish.

While mealy bug is the most common enemy of Cacti, the scale is much more difficult to combat and get rid of. It takes thorough application well followed up to get the best of this pest. If the plant can be scrubbed with a stiff brush like an old tooth-brush with the bristles cut off short, the old scales can be easily dislodged, after which a good spraying of kerosene emulsion applied frequently for a week or two will probably do the work. But where the close covering of spines renders it difficult or impossible to reach the infested spot with a brush, the frequent spraying with the emulsion will in



E. Cac. Cornigereus.



A Nice Collection.

time get ahead of the insect by destroying the eggs and young as they are hatched out. If water can be applied with force with the watering hose, it is a good idea to lay the plant down on the ground and let the water do the scrubbing. The soil may be all washed off the roots, but if it is a bad case this will do no harm, and fresh soil will help in ridding the specimen of its enemies. When cleaned, the emulsion may be applied the same as after scrubbing with the brush.

KNOCKS THE MEALY BUG.

So many people have trouble keeping down the mealy bug that loves to hide in the shelter of the thick covering of spines on some of the Cacti, complaining that they either get the cures recommended too strong and burn the skin of the plant, leaving an ugly brown spot, or too weak and of no effect, that we have been experimenting on a preparation that will be *safe* and *absolutely sure* in effect, and have found it in

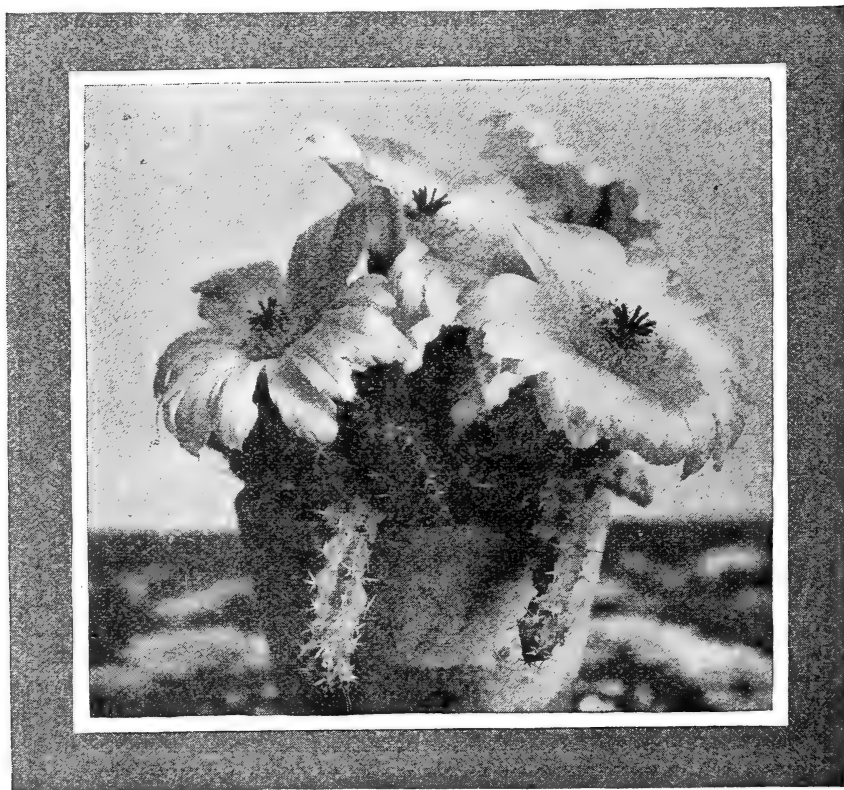
CHILDS' BUG SCORCH,

A jelly-like substance, quickly dissolved in water, easily applied and sure death to the woolly pests. It is put up in convenient sized cans for mailing, and there is enough in one can under ordinary circumstances to last for a season. With a can of this on hand, there need be no fear of mealy bug's ravages, and it is also a great assistant in keeping down scale if the latter appears on your plants.

DIRECTIONS.—For mealy bug, dissolve a teaspoonful of Bug Scorch in a pint of hot rain water, and apply while still as warm as you can bear the hand in it, using an atomizer or brush to get it to the spot. It can be put on freely, allowing the liquid to run down the plant to the roots, where the bugs often are more plentiful than on the plant itself. The more force can be given to the application the better the effect. About a week after the first application, it should be done again to prevent the further spread and kill any of the bugs that may have survived the first dose. **Price, per can, 40 cents (postpaid).**

Be sure and include a can of Bug Scorch when ordering Cacti, or send for one at once if you are troubled with mealy bug or scale. It will save you many dollars in loss of plants or appearance of fine specimens.

THE CALLANDER CACTUS CO., Springfield, Ohio.



E. Berlandieri

DESCRIPTIVE SECTION



In the following pages we give short descriptions, and as many illustrations as possible, of five hundred or more varieties of the Cacti and Succulent families. Almost all of these are carried in stock by The Callander Cactus Co., and all descriptions are taken from actual personal acquaintance with and study of the plants themselves. The writer knows the fascination the unfolding of the wonders of nature, as seen in a Cactus collection, has for the fancier who has even 20 to 100 varieties, and often wishes his many good friends whose correspondence has been a means of acquaintance, could spend a few hours in enjoying an inspection of this magnificent collection of thousands of rare plants from all parts of the world. With this thought in mind, we take pleasure in extending an invitation to all of our thousands of customers and friends to visit our Cactus houses at Springfield, the greatest floral center of America, if it ever comes within your power to do so.

While a great many more varieties are known than are here listed, only those that are carried in stock, and which can be supplied at the prices quoted, are given space in this list. We wish our friends to bear in mind the fact that many of the rare sorts are brought from great distances which require three months in some cases to even get a reply from by letter, and when the supply runs short, it often takes longer to replenish it than was anticipated. This being the case, it will be of great assistance at times in filling orders promptly if a number of selections are made to be used as second choice, in case the stock of any in the order has become exhausted. The original order will be filled if possible, and substitution of the second choice made only when it is absolutely necessary.

Prices given include packing and boxes. Small parcels will be sent by mail, pre-paid, and larger parcels will be sent by express at customers' expense.

Remittances.—Send money by express money order, postoffice order, bank draft, or registered letter, as any of these are quite safe. Do not send stamps unless unavoidable, as they often become wet and stick to the order, destroying them or causing a lot of trouble. But if necessary to do so, **SEND ONE-CENT STAMPS**, as we can use them of that denomination.

Terms Cash—Doing business over such an immense territory, and selling at the lowest prices possible, it is impossible to give credit, as we would have to ascertain the standing of every customer asking it. Please do not ask it. Our rule is cash with the order.

References.—We refer by permission to the First National Bank, Springfield, O.; the Postmaster of Springfield, Ohio; Agent American Express Co.; Springfield Floral Co., or any advertising or mercantile agency.

Exhibition Plants always on hand. Prices given with full description on application. Prices in this catalogue cancel all previous offers in former price list.

Address all communications, and make all money orders payable to

The Callander Cactus Company, Springfield, Ohio.

A. D. HOSTERMAN,
President.

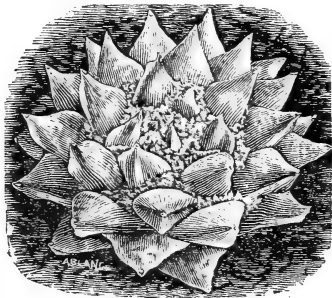
J. H. CALLANDER,
General Manager.

ANHALONIUMS.

The only class of Cacti which are truly spineless, and one that has been variously placed under several different headings. By Mr. Watson this genus is left out altogether, and its members included under the name of Mamillaria. A French writer, Lemaire, first introduced the name, which was dropped, and again revived by J. M. Coulter in his contributions to the National Herbarium, Volume III., Nos. 2 and 7, in which he says that to this decision Dr. Engelman had finally come before preparing his contributions to the Botany of the Mexican Boundary, 1859, though in 1856, he classed them with the Mamillarias. It is a small class with tapering, turnip-shaped roots, the tops projecting only slightly above the soil. Some of them have a hard, horn-like surface, each separate tubercle representing the leaves of the plant, and looking as though carved from stone, so regular are they in form and design. Others are soft and yielding to the touch, giving rise to the name "Dumpling Cactus." All are interesting, and a collection is not complete without them. They are persistent bloomers, the little *A. Williamsii* keeping up a succession of pretty pink flowers all summer.

The general treatment that best suits this genus is to plant in coarse, gravelly sand, and give very little water, none at all in winter.

A. Fissuratum (Living Rock).—One of the greatest curiosities in the plant kingdom, looking as though carved from stone in a most intricate fashion, with its horny covered tubercles arranged in rosette shape, called by the Indians "Star Rock," and "dry whiskey," the latter name because the eating of the pulp had an exhilarating effect on them. It is found in dry, rocky places, and where rain seldom falls, and looking so much like a stone is hard to find. Its home is along the Mexican border, near the Great Bend of the Rio Grande, in Texas, and extending southward into Northern Mexico. It bears a pretty pink or lilac colored flower, opening in a succession in June and July, sometimes later. Price, 25c for nice plants, larger, 40c, 50c, to 75c.

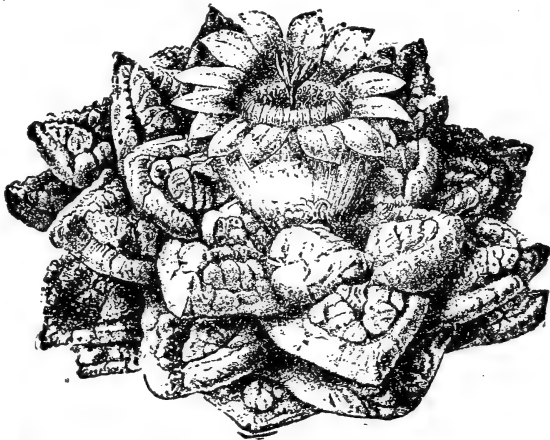


A. PRISMATICUM.

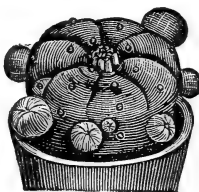
A. Prismaticum, the finest and largest growing sort in this genus, attaining a diameter of 8 inches. The hard, gray-colored tubercles taper to a point and are quite smooth, unlike the deeply furrowed and figured *A. Fissuratum*. They rise from a bed of wool-like substance, out of which comes the very large, pure white flower, really borne on the upper base of the young tubercles. Found in Mexico, in Coahuila district, and extending as far south as San Luis Potosi. Very rare and hard to keep in stock, but at present the supply is large. Fine specimens, \$1.00; very large, \$2.00 each.

A. Lewinii.—One of the Dumpling Cactus class, with an unusually long turnip-shaped root. Grows to two or two and a half inches in diameter, and looking like a little green ball dotted over irregularly with little white tufts like cotton. Bears pretty pink flowers all season. Will stand more water than the first two listed. Price, 40c to 75c.

A. Sulcatum.—The smallest of the species, grows in the style of *A. Fissuratum*, but with smooth tubercles of a dark green color. Bears a dark purple flower, and is a free bloomer. One of the rarest of the class so rarely found that some of the writers have thought it to be extinct. Grows from one to two inches in diameter, and is found in the same district as *A. Prismaticum*. Price, 75c to \$1.00 each.



A. FISSURATUM (LIVING ROCK).



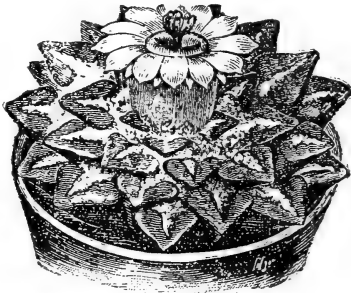
A. WILLIAMSII.

A. Williamsii. — The "Dumpling Cactus," answering to the same description as *A. Lewinii*, except that the cotton-like tufts are not so pronounced as on the latter. Price, 25c.

Ridgewood, N. C. — Your catalogue and my most beautiful "Senilis" arrived safely this morning, for which please accept my many thanks.

—Mrs. Wm. Dinsmore Bowers.

We make a specialty of large collections and can give grand value if allowed to make our own selection. We would be pleased to furnish estimates for outdoor beds, or conservatory collections to any amount.



A. SULCATUM.

ASTROPHYTUM.

A small class, but very select, every fancier having a great desire to have each of them in his collection. The main characteristic is the covering of innumerable little white tufts like cotton, that gives the skin a gray or mottled appearance. Its members are found in Central and Southern Mexico, and are rare and hard to find, even in their native home.

So extremely difficult is it to keep up a constant supply of this species, that we consider ourselves fortunate if our collectors can find a dozen of each sort on a three-months' trip. Collectors who receive a good plant of any of the three varieties listed below, certainly are favored, and possess three of the rarest gems in the whole Cactus family. Not only are they very rare, but they are well worth having, and highly prized for their beauty and oddity of form, and these features, with the additional fact that they are the freest of bloomers and bear exceedingly beautiful flowers all season, in a close succession. When showing visitors their Cactus collections the fancier always points with pride to these novelties, if he or she is fortunate enough to be the possessor of one or more of them, and not without reason, for invariably they attract the attention of all, whether interested in Cacti or not.

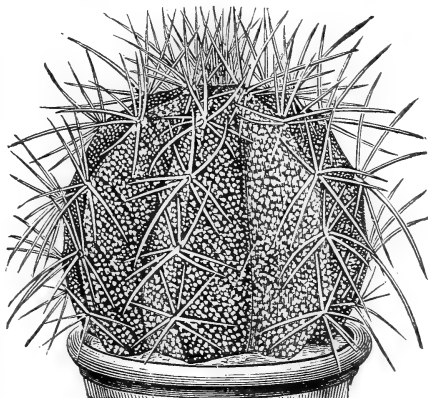
The same treatment as for Echinocacti answers well for these, and, in fact, most authorities class them as Echinocacti.

One-half garden soil, and one-half fine gravel or coarse sand, for the roots to penetrate into, and the plant itself set on clear sand, as shown in our "Cactus Culture," with the bottom of the pot filled with charcoal, suits this class well.

A. Capricornis.—A close rival of the Bishop's Hood for beauty and oddity. Having the same general form and tuft-like markings; it has besides a crown of wavy black spines that are unlike the spines on any other Cactus. Its flowers are larger than the latter plant, of a rich yellow with a crimson center. Very fine bloomer and good value at \$1.00 for nice plants, to \$2.00 for very large specimens.



A. CAPRICORNIS.



A. ORNATUS MIRBELLI.

A. Ornatus Mirbelli.—Of the same general form as the first two, having 6 to 8 ridges, and the little white tufts more marked than either of the others, but it has also handsome yellow spines, stiff and sharp, adding to the appearance of the plant so that it is really the most handsome one of the three. It is the largest of all, as it grows to a height of 1 to 2 feet. Our smallest plants are very heavy for mailing, but we will send a fine specimen for \$1.50 to \$5.00.

MELOCACTUS.

This is a small family of peculiar habit. In general form and spines, they greatly resemble the Echinocactus, but they have been set apart in a class by themselves on account of the strange woolly cap which forms on the top of older plants and out of which come the flowers.



MELOCACTUS COMMUNIS.

A. Myriostigma.—The Bishop's Hood; rare even in a collection of good rare plants, and sure to attract attention wherever seen. It looks more like a symmetrically carved piece of gray stone, and when in bloom, which it is nearly all summer, it seems a wonderful combination to see a stone flowering. Its flowers are of the clearest yellow seen in any Cactus bloom, and last for several days, closing at night and opening in the sunlight. Grows to a size of about six inches in diameter, and is always of the same form, showing five ridges. Price, 75c to \$3.00 for fine plants.



A. MYRIOSTIGMA.

M. Communis.—Globular, 6 inches to a foot in diameter, stout spines of a dirty yellow color, and the cephalium or cap a red color. Price, when in stock, \$1.00 to \$5.00.

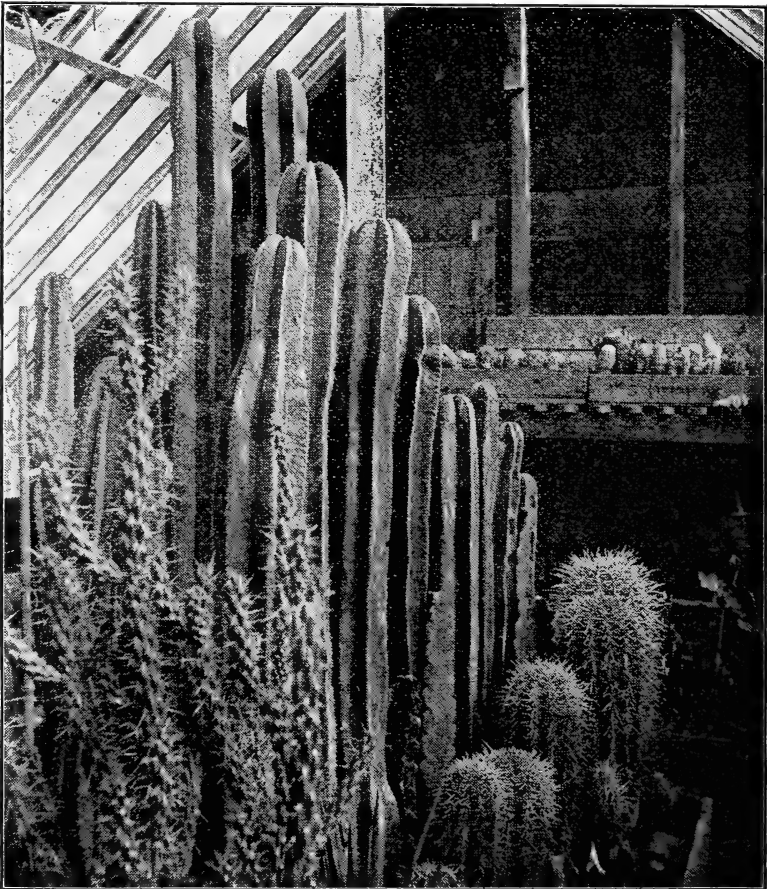
CEREUS.

The *Cereus* family presents a wide difference of character in some of its variations of form, from the slender, drooping Rat-tail Cactus (*C. Flagelliformis*) to the towering giant of all Cactus, the *C. Giganteus*, which reaches a height of 60 feet in its native home. Curiously enough, it is not the immense giant that bears the finest bloom, but the slim, climbing *C. Grandiflorus*, no larger than one's finger, which bears the palm for grandeur of bloom. While the greater number of the *Cerei* are night bloomers, and highly prized for the freedom with which they produce their magnificent flowers, yet a number of them are day bloomers, and very profuse in their bloom, too. Among these are the Rat-tail, with hundreds of bright, rose-colored flowers; *C. Coccineus*, which is an enlarged edition of the former, and *C. Tuberosus*, with Lilac flowers, etc. Many of the *Cerei* grow very rapidly, and soon make fine specimens, but oddly enough, the largest of all is one of the slowest growers, and must be imported at the full size desired as a specimen, as it appears to stand still under cultivation. Other heavy stemmed sorts, when established, will make two or three feet of growth in one season, and soon reach larger proportions. A good group of *Cerei* are very much admired, even when not in bloom, as they present good color contrasts from the glaucous blue color of *C. Jamacaru* to the almost black *C. Pasacana*, and the pearl gray spines of *C. Giganteus*.

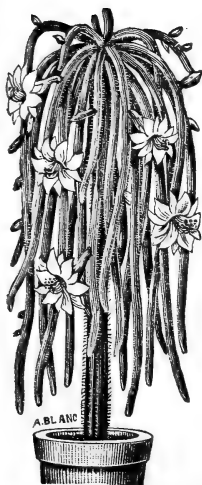
Cultivation.—The *Cerei* will stand a high temperature, and do exceptionally well in a conservatory, though some growers have had good results growing them outdoors or on warm verandahs, in summer, and giving them resting quarters inside in winter.

Most of them will stand a little better soil than other Cacti, but they are not over particular. A nice, light loam with equal parts of sand suits them quite well, and is safer than trying to enrich the soil and force growth and bloom. When well established, and become thoroughly pot-bound, a little well rotted cow manure may be worked into the surface soil in the growing and blooming season. All grow readily from cuttings, and it is from the climbing varieties that most of the grafting stock is taken. Hybridizing the different varieties is also an interesting and satisfactory process.

Our *Cereus* department is our especial pride, as it contains hundreds of specimens ranging from the tiniest to huge plants of the columnar varieties ten feet in height. We can give most favorable quotations on extremely fine exhibition specimens, either singly or in sufficient numbers to supply a large bed for park or private grounds.



A GROUP OF COLUMNAR CEREI IN OUR GREENHOUSES.



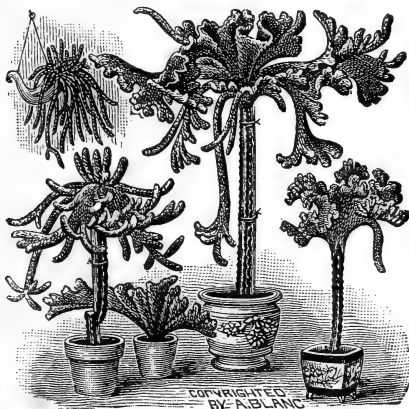
C. FLAGELLIFORMIS.
Grafted.

A splendid plant of drooping habit, rather than climbing. Stems about three-fourths inch thick. A Mexican plant, and a very fine, free bloomer. Flowers are brilliant scarlet, and very large (three to five inches). Like its smaller counterpart, *C. Flagelliformis*, the flowers last for several days. Price, nice plants, 35c. Grafted specimens, 50c to \$2.00.

C. Euphorbioides.—This should be classed with the *Pilocerei*, to which class it properly belongs, though it has none of the hair-like spines characteristic of that genus. Stems are stout, of a light sea green color. Flower unknown. Very rare. Price, \$1.00 to \$10.00.

C. Flagelliformis.—Rat-tail Cactus, a most satisfactory sort for hanging baskets or grafting on tall *Cerei*. A general favorite on account of the abundance of the fine crimson flowers. Nice young plants, 15c to 25c. Grafted plants on *Cerei* stock one foot and over, 50c to \$2.00.

C. Flagelliformis Aurora.—Same as above, but flower is a clear rose color. Small plants, 25c. Grafted 50c.



C. FLAGELLIFORMIS CRISTATA.

Freeport, Ill.—I want to thank you for that nice plant you sent me of the Old Man Cactus. It was quite a surprise as well as delight to me to receive a nice plant of Old Man.—Annie C. Widener.

C. Atropurpureus.—Stem of plant green, shading to black or purplish brown, fine spines and a good bloomer. Flowers white, nocturnal. Price, \$1.00.

C. Baumannii.—Growth resembles *C. Colubrinus*, but stems are prettier, with white spines. An exceedingly fine sort from Peru, especially valued for its fine flowers of orange and red, borne in the daytime. Price, 75c to \$2.00.

C. Bonplandii.—Like *C. Colubrinus* in growth, but with fewer and stouter spines. Will twine around a stouter stem or support. A native of Brazil, flowering at night. Good as grafting stock. Price, 50c to 75c.

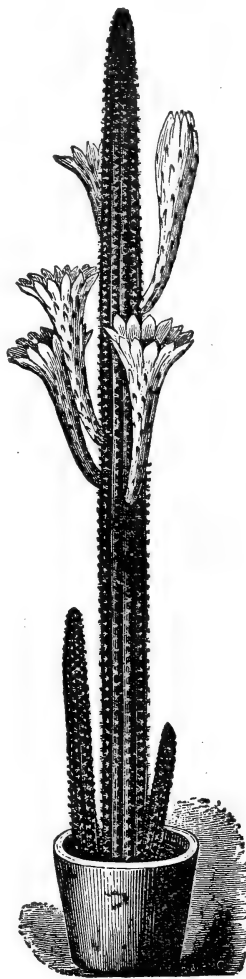
C. Bridgesii.—A beautiful plant of stout growth and a fine sky blue color. Native of Bolivia. A particularly good species with good spines. Price, \$1.00.

C. Coccineus.—A splendid plant of drooping habit, rather than climbing. Stems about three-fourths inch thick. A Mexican plant, and a very fine, free bloomer. Flowers are brilliant scarlet, and very large (three to five inches). Like its smaller counterpart, *C. Flagelliformis*, the flowers last for several days. Price, nice plants, 35c. Grafted specimens, 50c to \$2.00.

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C. Flagelliformis Aurora.—Same as above, but flower is a clear rose color. Small plants, 25c. Grafted 50c.



C. COLUBRINUS.

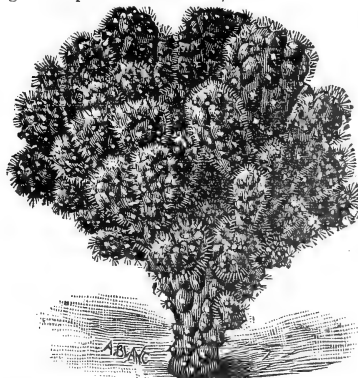
nice grafted plants at 75c to \$2.00.

C. Colubrinus.—Well shown in the illustration, is a fine, fast grower, especially suitable for grafting purposes. Quickly reaches a good height, and blooms freely, bearing a large white flower, opening at night. One of the best for the amateur to experiment with. Price, 25c to \$1.00. Very large, \$2.00 to \$5.00.

C. Coerulescens.—A great favorite with collectors, but hard to procure in good supply. Stems very stout and a beautiful light blue color, with nice spines. Flowers white and very large, nocturnal. Price, \$1 to \$3.

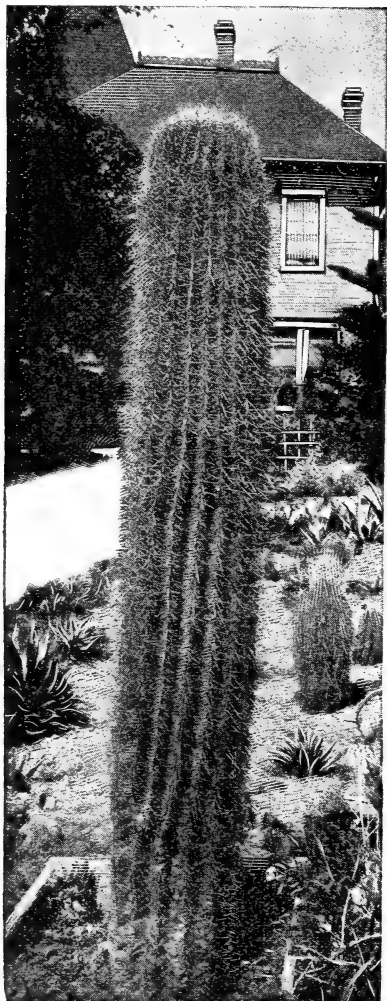
C. Emoryi.—Found in the southwestern corner of California, and called "Velvet Cactus," from the beauty of the dense covering of yellow spines on the new growth. Quite scarce of late, but we have a good stock at present, and can supply nice plants at 50c.

C. Flagelliformis Cristata.—Called "Elkhorn Cactus," from its peculiar coxcomb-like branches. It is a cristated form of the Rat-tail Cactus, and in great demand. Our stock at present is good, but usually we run short before the end of the season. While we have them we sell



C. FORMOSUS MONSTROSUS.

C. Formosus Monstrosus.—A gem in the collection of monstrosities, very neat growth, looking like a bunch of small branches, closely crowded together. Always satisfactory and improves with age. Cut gives a good idea of it. Nice plants on own roots, 50c to \$1.00. Well started grafted plants, \$1.00 to \$2.00. (Illustration page 5.)



C. GIGANTEUS.

C. Giganteus.—The Giant Cactus, and one that well deserves a place in every collection. Growing in Southern Arizona, Northern Mexico and Lower California, it reaches a height of sixty feet, occasionally branching near the top and throwing out an immense arm in candelabra fashion. The plant is often a god-send to the thirsty traveler, for its stored up supply of water can be drawn on by cutting the head off a young plant and scooping out a hollow in the pulp, in which a cool drink will soon collect. It is closely covered with its stout, pearl-gray spines, and is a handsome plant in contrast with the other dark green and blue stemmed Cerei. We were never in as good position to fill orders for this plant as now, our last order to our collector being for a ton of this one plant in small and medium specimens. Being very stout, even the smallest specimens cannot

be sent by mail, but as florists' express rate is special, the additional cost is small. Price for plants six to eight inches high, nearly globular, \$2.00. Ten to twelve inches, \$3.00. One to one and a half feet, \$4.00. One and a half to two feet, \$5.00. Very solid plants, three feet high, \$10.00. Larger plants a matter of correspondence.

C. Gemmatus.—Called in Mexico Pipe Organ Cactus. Is a stately plant, very solid, and having five to seven ribs almost filled out full. Grows ten to twenty feet high, is easy to care for, and makes strong growth. Our illustration, taken from a photo of a bed in our greenhouse, shows a fine group of this Cereus, with a few nice young Cer. Giganteus in the foreground. We have a magnificent stock of this plant, and recommend it highly at any size, from a small mail size plant up to a massive specimen, six feet high. Price, small plants, 50c to \$1.00, and up to \$25.00 for grand plants.

C. Grandiflorus.—The old favorite, Queen of Night Cactus. A climber of rapid growth, easily



C. COERULESCENS.

trained on a ladder or trellis. Requires very little pot room, as its air roots supply it with the substance needed. The grand flower, a foot in diameter, and exquisitely perfumed, makes this indeed one of the most indispensable sorts in a collection. Though much advertised, very few have the true variety, which is distinguished by its fine hairlike spines, which appear on new growth, and drop off when the real spines develop. Price, for strong well rooted plants, 25c.

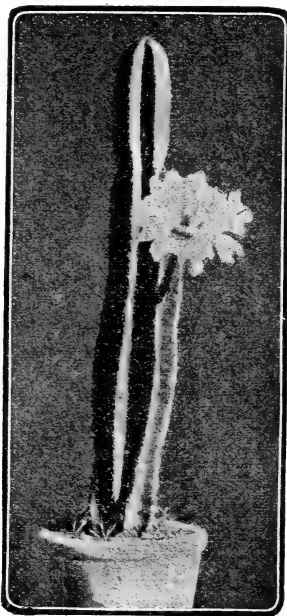
C. Greggii.—A very distinct species, growing from an immense tuberous root often a foot thick and one and a half feet long. The plant grows in a bush form, the stems being one-half to an inch thick. Color is a very dark green, and the skin of the plant has a peculiar appearance of being of a velvety texture. Very odd spine nests arm the edges of the ribs, which number six to eight. We have small rooted cuttings at 50c, and up to immense tubers at \$5.00 each. Native of Southern Arizona, and extending down well into Mexico.

C. Hamatus.—See Rostratus.

C. Hamiltoni.—A very rapid growing, round stemmed climber, with long, single spines (one to one and a half inches). Introduced by a Mr. Hamilton, of Baltimore. Handsome sort. Price, 25c to 50c.

C. Jamacaru.—A fine, heavy, upright grower of the blue stemmed style. Has six to eight ribs, armed with stout brown spines about one-half to three-fourths inch long in nests of ten or more. A good bloomer, opening its white flowers, eight

to ten inches in diameter, at night. Nice, stout plants, 75c to \$2.00. Very large plants up to ten feet high, prices given on request.



C. JAMACARU.

C. Macrogonus.—Attains a diameter of two and one-half inches, and branches freely if cut. A quick, strong grower, useful for grafting. Nice, handsome young plants, 75c to \$2.00.

C. Mallisoni.—Of the style of growth of *C. Coccineus*. Does best grafted on a tall stem of *Cereus*. A hybrid from *C. Speciosissimus* and *C. Flagelliformis*. Bears magnificent flowers four to six inches across of the beautiful color of its parent, *C. Speciosissimus*. Price for nice young plants, 50c. Grafted, well started plants, \$1.00 to \$2.00.

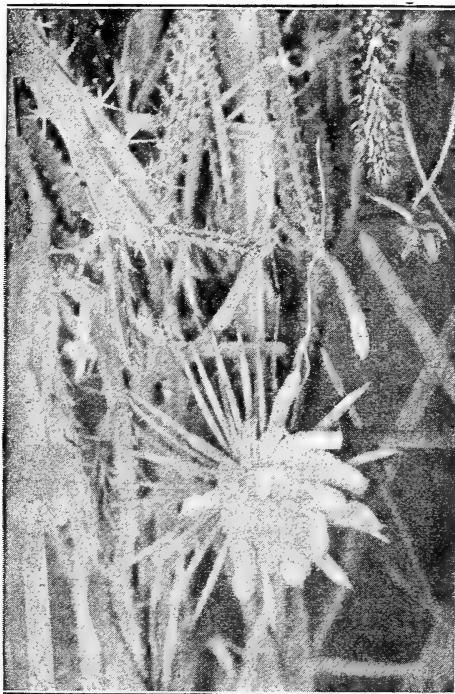
C. Martinii.—A round stemmed climber, much like *C. Hamiltoni*, the difference probably being in the bloom, which is unknown. Price, 50c.



C. McDONALDI.

20 feet in its native home. Very scarce. Price, small plants, \$2.00. Larger, \$3.00 to \$5.00.

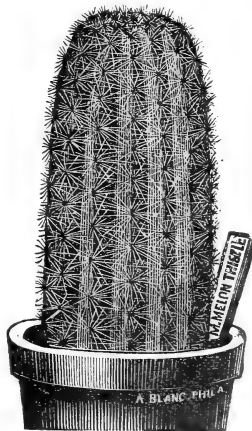
C. Nycticalus.—A very strong grower of the climbing variety. Mostly square in the stem, though sometimes six-sided. Very dark green. An excellent stock for grafting purposes, and one of the freest bloomers of the family. Flowers creamy colored and very large. Price, 25c to \$1.00. for fine plants.



C. NYCTICALUS IN BLOOM.

C. Peruvianus.—A columnar sort from Peru, very dark green, with black spines. Our stock at present is limited, but expect a shipment soon. Price for small plants, \$1.00 to \$3.00.

C. Peruvianus Monstrosus.—This is a monstrosity that never reverts to its original form, but continues its strange, purposeless style of growth indefinitely, yearly becoming more valuable and increasing in size. So greatly in demand that scarcely ever can enough stock be secured to supply all orders. Nice rooted plants, \$1.00 to \$5.00 each.



C. SPACHIANUS.

Price, for nice plants, 25c to \$1.00.

C. Spachianus.—Very stout grower, even when small. An extremely handsome sort from South America. Color a bright green with yellow spines. Stock limited. Price, \$2.00.

C. Speciosissimus.—More like a *Phyllocactus* in growth than a *Cereus*. A quick grower, splendid bloomer, and in every way a most satisfactory plant. The fine large flowers (six inches) are a bright cherry red, shading to purple in the center. A beautiful sight when the sun shines on it. A day bloomer.

C. Platanus.—One of the stoutest climbers, stems round, one or one and a half inches in diameter. Has long solitary spines. Grows very fast and is a good bloomer. Price, small plants, 25c to 75c.

C. Repandens.—Square shaped stems, one and a half inches thick, very useful for grafting stock, forcing a strong growth into the scion. Stock limited. Price, small plants, 50c.

C. Rostratus.—A square stemmed climber, almost spineless. Seems to be the same plant as *C. Hamatus*. Rivals the *C. Grandiflorus* in size of flower, but is a rather shy bloomer. A low priced plant, 25c to \$1.00. Cuts, 15c.

C. Serpentinus.—A round stemmed climber with very weak spines, not difficult to handle. Comes from Mexico. Price 50c.

C. Splendens.—Same style as *C. Colubrinus*, but flower is said to be finer. Introduced by Mrs. Shepherd, California. Fine plants, 25c to \$2.00.

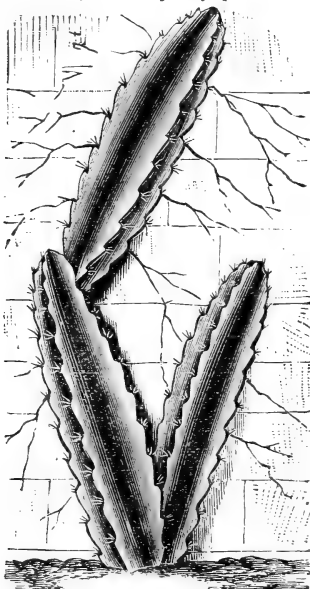
C. Tuberousus.—One of the tuberous rooted varieties, said to have valuable medicinal properties. Found in Mexico, but not plentiful. Roots form a little bunch of tubers, and plant grows in a bush form. Very slender, upright stems. Price, 25c to 50c. Grafted, 50c to \$1.00.



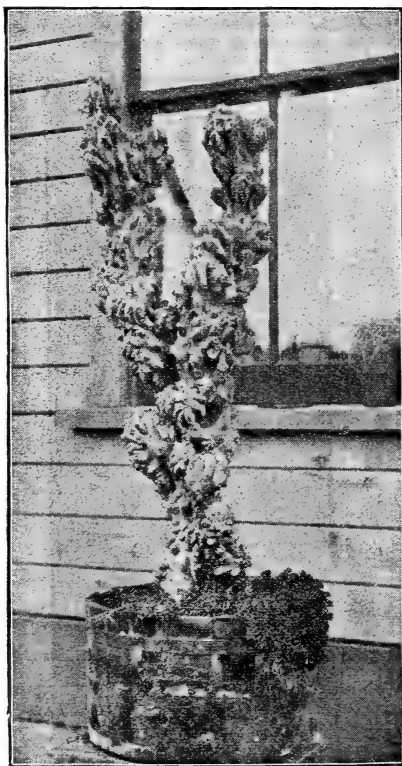
C. TUBEROSUS.

C. Triangularis.—A very strong grower of triangular form. Some old plants in cultivation have attained great size. Most useful for grafting stock, and a magnificent bloomer, the flowers being a foot or more across like an immense water lily. outer sepals yellow, giving the flower a creamy appearance. One of the very best climbing sorts, especially recommended. Its air roots are very prominent, often a foot long. Price, 25c to \$1.00.

C. Tetragonus.—A square shaped plant, very heavy when old, and a pretty plant when small,



C. TRIANGULARIS.



C. PERUVIANUS MONSTROSUS.

blue in color. Nice small plants, sometimes with four to six ribs, 50c to \$2.00.

C. Tortuosus.—A good sort of rapid growth. Very dark, almost black stems, one and a half inches thick, armed with formidable spines, the centrals one and a half inches long. Free bloomers, flowers white (six inches), nocturnal. Good young plants, 50c to \$1.00.

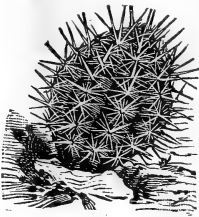
C. Variabilis.—A good sort, mostly triangular in form, but sometimes round or many angled. Fine bloomer. Stock limited. Price, 50c.



C. VARIABILIS.

ECHINOCACTUS.

This genus includes the heavy spined globular Cacti, named from "Echino," or "horn-bearing" Cactus. To many fanciers they are the most beautiful of all, and, indeed, the section of our greenhouse which contains these mammoth plants, shining in their armor, in all colors of clear golden yellow, white, gray, black and blood red, attracts more attention from visitors than any other. To the writer they are the handsomest of all, as they require no bloom to be beautiful and bright. *E. Grusoni* and *E. Pfeifferi* have a covering of clear, golden yellow spines, almost transparent on new growth; *E. Recurvus* shows a fine, deep red spine, very striking in shape; *E. Ingens* the delicate pearl gray color, and *E. Lecontei* is resplendent in a brilliant network of white, yellow and red, which, when wet, take on a much brighter hue. Then, too, the Echinocacti are so independent in the self-possessed way they sit in their places, not easily moved or disturbed, that they command admiration. They are mostly found in Mexico, but a number of very fine sorts are found in Texas, Arizona and Southern California. They grow in rocky, dry places, and will endure long periods of drouth without visible ill effects. The soil that best suits them is a coarse sand and light loam, about in equal parts. Good drainage is essential, and with that and given good light, these plants are not so particular about the careful watering as some others of the family. Our stock of these fine plants, many of them very rare and beautiful, is extra fine, and we can fill orders promptly.



E. BICOLOR.

pretty in form, and with neat spines, the central spines in each nest a complete hook, turned downward. Flowers purple. Northern Mexico. Price, 40c to 75c.

E. Capricornis.—(See *Astrophytum*.)

E. Cylindraceus.—Found in the Great Mohave Desert in Arizona. Has very long (6 inches) spines, grayish red when dry, blood red if wet, completely interlacing the plant. Flowers yellow, barely reaching through the spines. Price, \$1.00 to \$5.00.

E. Coptonogonus.—From Northern Mexico, reaches a size of 4 inches in diameter, has twelve to fourteen sharp ridges, armed with short stout spines, mostly curving inward to the top of the plant. Spines more plentiful on some specimens than others. Flowers small, purple and white. Price, 50c to \$1.00.

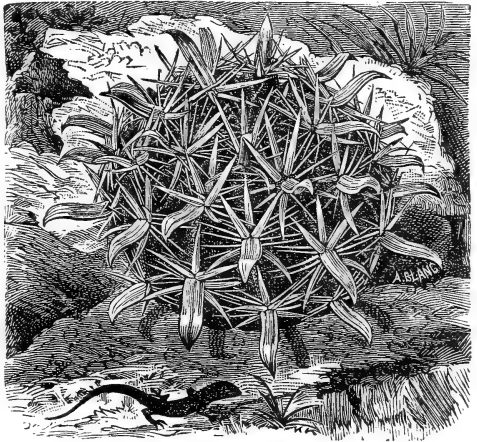
E. Cornigerus.—Called Lizard Cactus from the peculiar shape of the curving, flat, central spine. One of the very finest of the class, reaching a size

E. Bicolor.—A small growing sort from 2 to 8 inches in height. Spines are not so heavy as some, but show a good contrast of color in red and gray. Extra good bloomer, flowers two and one-half inches across, bright purple. A kind that will give good satisfaction. Price, 35c to \$1.00.

E. Brevihamatus.—Also a small growing sort, reaching a height of six inches, but very



E. BREVIHAMATUS.



E. CORNIGEREUS.

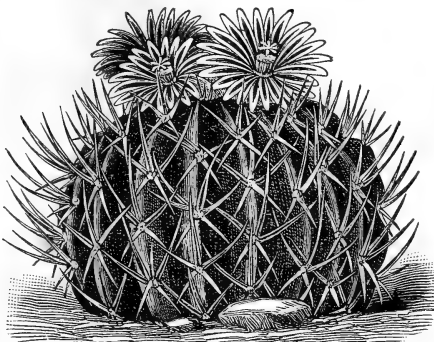
spines, the central spine flat and not much thicker than paper. Flowers vary, some being white with purple stripe and others a bright purple. Very pretty plant and a good bloomer. Price, 50c to \$1.00.

E. Electracanthus.—A well set-up plant, with a stand-offish sort of appearance. Spines stand out well from the plant and are 1½ to 2 inches long and stout. Central Mexico. Price, 75c to \$3.00.

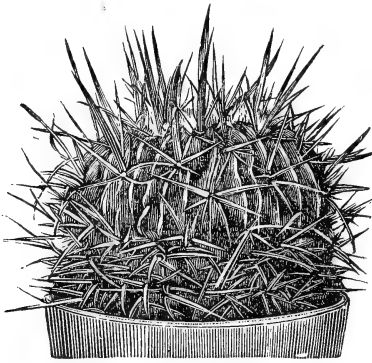
E. Emory.—Found near the Mexican border along Southern Arizona. Grows very large, and ribs are more tuberculated than on the others of this class. Spine nests are not very close together, composed of stout laterals and a heavy, recurved and hooked central. Flowers purple. Not easy to get small plants, and at present can only offer large plants at \$5.00 each, one foot in diameter.

E. Erectocentrus.—Found in rocky ridges in Central Mexico. Is much like *E. Recurvus*, but grows in a more elongated, upright style. Hard to get in good supply. Price, 50c.

E. Grusoni.—The Golden Cactus, and well deserving its name. Always greatly admired and coveted by every collector. Attains a large size, nearly two feet in diameter. Found in the mountains of Central Mexico; collectors find it difficult to get the plants taken out for them, as it is a most tedious operation, requiring days of toil.



E. COPTONOGONUS.



E. CRISPATUS.

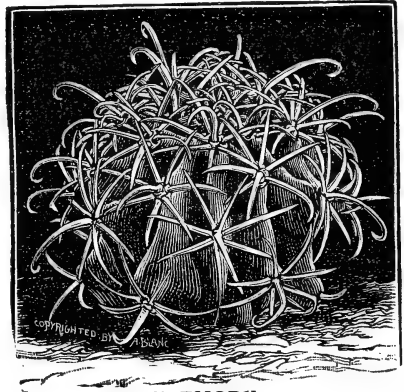
Consequently the price is high and stock limited, but our arrangements to keep up a supply are with reliable men, and we hope to fill all orders promptly. All who have seen the beautiful golden spines of this plant place it among the handsomest of all. Price, \$2.00 to \$20.00 for very large specimens, as large as a tub.

E. Helophorus.—A most distinct sort, usually a clear green, with purple markings, and pearl gray spines, very stout, especially the central one. Ribs few and full, a really striking variety. From Southern Mexico. Price, \$1.50 to \$5.00.

E. Hexaedrophorus.—A small growing sort looking more like a Mamillaria than an Echinocactus. The star-shaped spine-nests are borne on the ends of large round tubercles, and the flowers, pink shaded to white, are very large and beautiful. Found in Northern Mexico, though not plentiful by any means. Price, 50c to \$1.00.

E. Horizontalonius.—A very handsome sort, found in quite a wide stretch of country along the Texas and Mexico boundary, from El Paso to Eagle Pass. Its color is quite distinct from the others, being a gray with the green plant showing through; gets the name "Nigger-head" in some

localities. The cut shows the plant well. Spines are very stout, but not particularly sharp, and the plant is easy to handle. Flowers are especially handsome, and on sunny days seem to spring like magic through the thick network of spines at the top of the plant. Color a bright pink with a purple shade, the buds are covered with a cottony coat that protects them from the spines till they get through them. It must be given scarcely any water, as it decays very easily until it has taken root after being moved. Price, 25c to \$1.00.

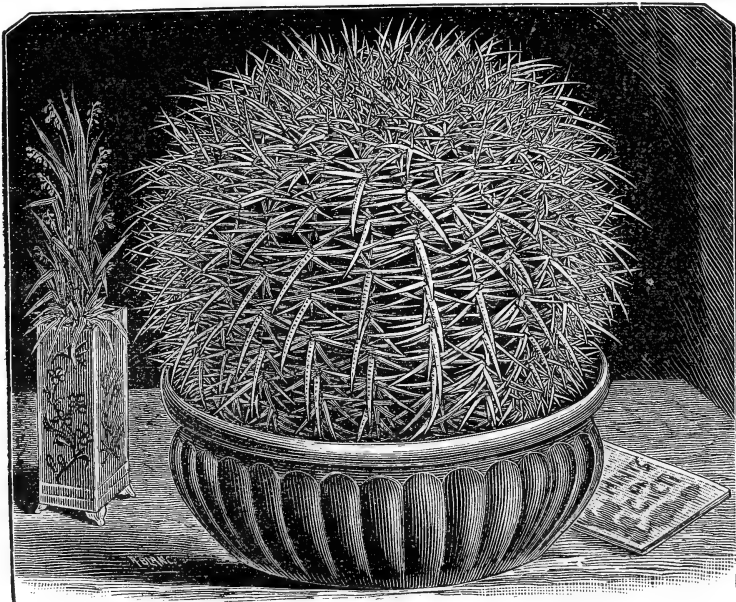


E. EMORY.

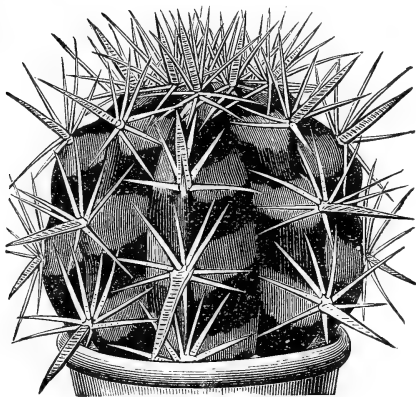
E. Ingens.—A Mexican sort that grows to a large size. Light grayish green, with pearl gray spines, the central spine very heavy and dagger-like. Most specimens collected are heavy, so price is high, \$1.50 to \$3.00.

E. Johnsonii.—A strong spined variety found in Southern Utah. Introduced by Mr. Johnson, formerly of Salt Lake City, and named for him. Considered one of the very finest in the style of *E. Cylindraceus*. Price, \$1.00 to \$3.00.

E. Intertextus.—This looks like the *Echinocereus* family, its flattened rosettes of spines cov-



E. GRUSONI.

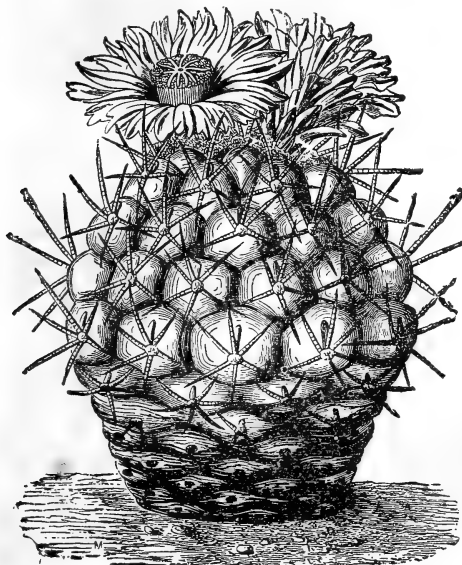


E. HELOPHORUS.

ering the plant like a network. Never grows large. Found in Northern Mexico and not easy to get. Flowers purple and white. Price, 40c to 75c.

E. Lancifer.—A great favorite on account of its clear white spines, which are sharper than usual in this family. A good plant at a low price, 25c.

E. Lecontei.—Thought by many to be the very finest of all Cacti, and certainly it has few equals and no peers. From the smallest plant, 4 inches in diameter, to an immense specimen 3 feet high and 2 feet through, every phase of it is exceedingly beautiful. The spine nests, which are so close together that the plant can scarcely be seen through them, show a preponderance of a bright red color, intermixed with yellow and white. In some plants the yellow is more abundant than others, but however the mixture, the plant is a most striking one. No plant brings such enthusiastic praise from delighted customers as this one, and though we have already a large stock on hand, we have placed an order with our own special collector for nearly a ton of this plant to supply the expected demand. The only difficulty is to find small plants, such as the majority of people want. We are making a great effort, however, and expect to fill all orders promptly. Prices, extra nice plants, \$1.00; twice

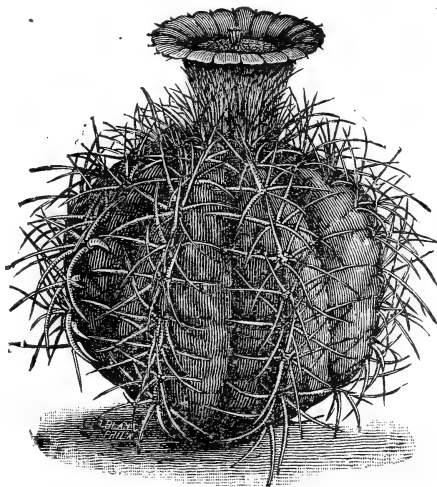


E. HEXAEDROPHORUS.

as good, \$2.00. A foot or more in diameter, \$5.00, and at all prices up to \$25.00 for specimens weighing 100 to 150 pounds.

E. Longhamatus.—This is not a specially handsome plant, but well worth growing for its particularly fine flowers which are large, 2 to 3 inches, and a clear lemon yellow shading to red in the center. Central spines often 6 inches long and ending in a hook that catches one's clothing in a rather friendly manner. From Northern Mexico, and along the Texas boundary, where it grows to a foot or more in height. Price, 50c to \$5.00 for extra large ones.

E. Lophothele.—A most distinct style of plant, looking out of place among the Echinocacti. It has symmetrically arranged tubercles of a peculiar quadrangular shape, with long gray spines, on some specimens nearly 3 inches in length. Needs acquaintance to be appreciated, and is one of the choicer sorts. Color is light gray, flowers mostly white, and very pretty. Price, 50c to \$1.00.

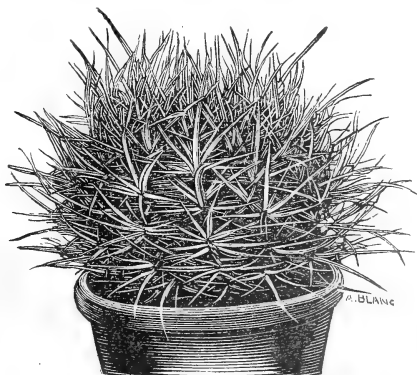


E. HORIZONTALONIUS.

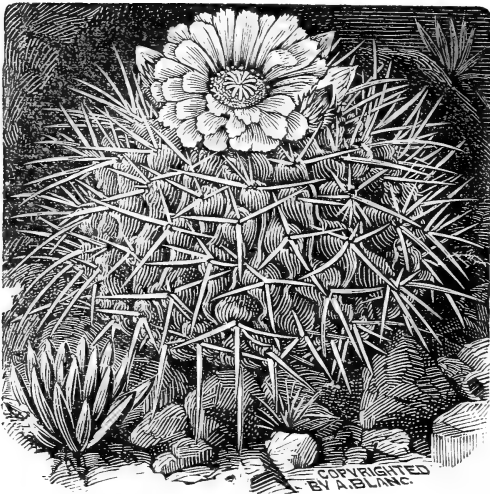
E. Multicostatus.—The general run of these plants are much like *E. Crispatus*, but ribs are usually more numerous, spines shorter or altogether lacking, and flowers almost clear white. Very curious little plants. Price, 50c to \$1.00.

E. Ornatus Mirbelli.—(See *Astrophytum*.)

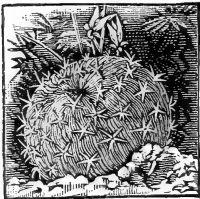
E. Pfeifferi.—A very handsome sort, from Southern Mexico, reaches a size of one foot in diameter. Numerous sharp ridges, armed with the



E. LECONTEI.

**E. LOPHOTHELE.**

clearest yellow spines of any variety, so transparent when young as to look like glass. Hard to secure, and very rarely seen in collections. Only quite large plants in stock. Price, \$1.50 to \$3.00.

**E. MULTICOSTATUS.**

E. Polycephalus.—The longest and strongest spined plant in the collection, spines an eighth of an inch thick and six or seven inches long on some specimens. The spiny covering is so dense that the plant itself is hidden. Color is a grayish

E. Pilosus. — A particularly fine variety from Southern Mexico, that reaches four or five feet high. Ridges are sharp and main spines are a fine red color, very bright when wet, with a few white hair-like spines lying close to the plant. Small plants are very scarce, the average being one foot in height and diameter. Price, \$5.00; a few small plants at \$2.00.

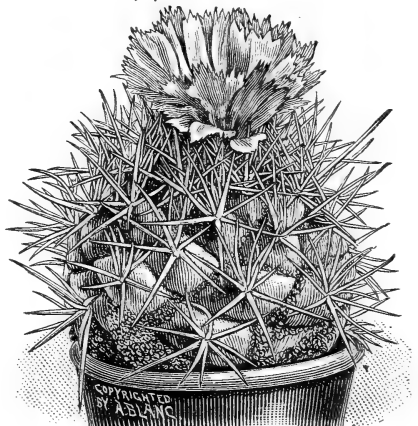
**E. SETISPINUS.****E. SCHEERI.**

red, turning to a deep blood red when wet. Grows in clusters and reaches immense size, sometimes 6 feet in diameter, and 4 feet high, a mass now on the way to us being reported that size. All fanciers greatly admire this beautiful Cactus. Found in the Mohave Desert, along the line between California and Arizona and extending into both districts. Single plants, very fine, \$1.50. Clusters from \$3.00 to \$10.00, and up to \$25.00.

E. Poselgerianus.—A small grower, having the tuberculated form of the Mamillarias, but distinctly an Echinocactus. From Central Mexico and hard to keep in stock. Flowers white, shaded to pink, plant a fine gray color. Price, nice plants, \$1.50.

E. Recurvispinus.—One of the gems of every collection, of a bold, handsome appearance. The sharp ridges armed with very heavy spines, of a deep blood red color, the central spine being flat, almost as heavy as E. Cornigerus and curved almost to a hook at the end. Southern Mexico. Plants very heavy and extra fine. Price, \$1.50 to \$3.00.

E. Robustus.—Several forms have been received under this name. The true sort has not yet been satisfactorily fixed on. Not guaranteed true to name. Price, \$1.00.

**E. POSELGERIANUS.**

E. Scheeri.—Central Mexico, a form greatly resembling E. Brevihamatus, but spines are less abundant, and hooked central spine shorter. Price, 50c.

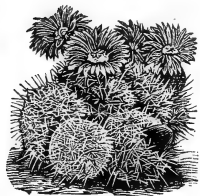
**E. INTERTEXTUS.**

E. Schillinzkyanus.—A hybrid introduction of F. A. Haage, Jr., Germany. The smallest Echinocactus known to the writer is full grown and bearing flowers that completely hide the plant, when only one inch in diameter. An exceedingly interesting and pretty species. Flowers a fine clear yellow. Price, blooming size, 50c.

E. Scopa Candida.—(Brush-like.) From Brazil. Covered with soft clear white spines. Very neat and attractive, but extremely scarce. Price, \$1.00.

E. Scopa Candida Cristata.—A cristated form of the above, most peculiar in shape, and handsome with its brush-like covering of pure white spines. Very rare. Price, \$2.00.

E. Setispinus.—Southern Texas. A very satisfactory sort, not particularly handsome, but easily grown, and a profuse bloomer. Central spine is hooked. Flowers two and one-half inches across, bright yellow with crimson center. Price, 25c to \$1.00.



E. SIMPSONI.

E. Simpsonii.—One of the few clustering Echinocacti found in Colorado, and perfectly hardy in any situation. Looks more like a cluster of Mamillaria than one of this species. Spines cover the plant closely, as shown in cut. Flowers deep crimson. Price, 25c.

E. Simpsoni.—(Perpetual Snow.) A form of the above with snow white spines, very rare. Price, 75c.

E. Tetrazyphus (Central Mexico).—Much like E. Crispatus, but much finer in the spines, has lateral spines long and pure white, almost transparent. An extra good and distinct sort. Flowers white with purple stripe. Price, 75c.



E. TEXENSIS.

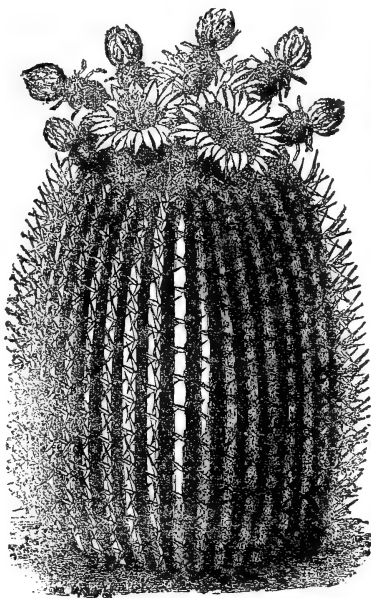
E. Texensis.—Native of Southern Texas and Northern Mexico. A low cushion formed plant, very easily grown and a good bloomer. Flowers very handsome, bright pink, the edges beautifully fringed. No collector should be without this plant. Grows to a foot in diameter. Price, 25c to \$3.00.

E. Turbiniformis.—Needs no description beyond the illustration. Found in Southern Mexico, but very rare and hard to secure. Seldom more than two inches in diameter. Stock limited. Price, \$1.00.

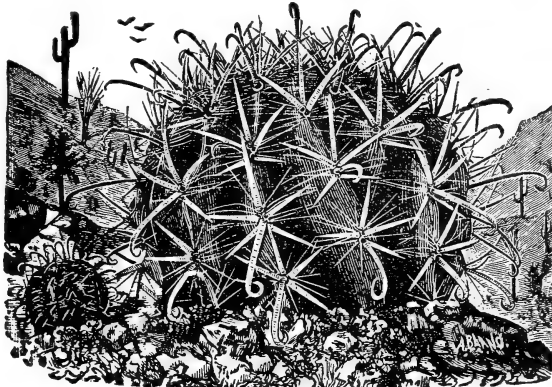
E. Uncinatus.—A beautiful small growing sort, its beauty being in the spines, which are mostly purple, four in each nest, hooked at the tip, and the central spine very long, yellow and also hooked, making a fine contrast. Has a strange flower like purple fish scales overlapping, and almost enclosing a deep lilac bloom. Very scarce. Price, \$1.00.

E. Viridescens.—A California plant, found near San Diego. The spines are a brilliant red when young, turning to gray when old. The plant is a lively green, and though not often seen in col-

lections is well worthy of a place, being quite distinct. Flowers greenish yellow, not very striking. Price, 35c to \$1.00.



E. VISNAGA.



E. WISLIZENI.

E. Visnaga.—(Toothpick Cactus.) So-called by the Mexicans, because the formidable spines, which are often 4 to 6 inches long, taper to a point, and are useful for the purpose for which they are named. Southern Mexico is its home, where it reaches a large size, 8 to 9 feet high. Small plants seldom found. Price, \$2.00 to \$10.00.

E. Wislizenii (Fish-hook Cactus).—Found in the region round El Paso, Texas, and westward into Arizona. One of the largest varieties, second only to E. Visnaga. A perfect plant is indeed a fine specimen when about two feet in diameter, and covered with strong hook brown spines, the central formed into a perfect hook of great strength, and often six inches long. Our specimens are grand in form, but mostly large in size, as small plants are scarce. Price for extra good plants, \$1.00, \$3.00, \$5.00 and up to \$20.00.

Be sure to add some names as second choice, to be sent if out of those ordered. It will save time.

ECHINOCEREUS.

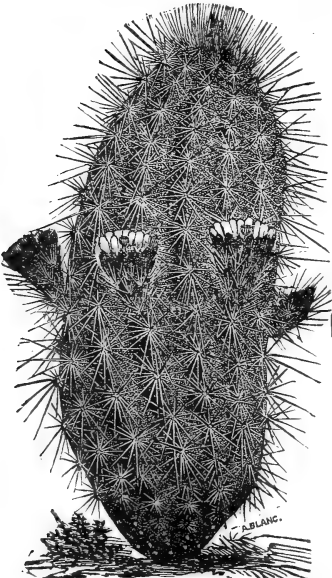
A class of plants apparently allied to the Cerei family, but generally of low growth and in clusters. It contains some very handsome specimens in themselves, but the class is valued most for the abundance and beauty of its bloom. No other branch of the Cactus family will give a tithe of the gorgeous display that a good collection of Echinocerei will. They show many shades of red, salmon, pink, purple and yellow, and if well rested all winter can be depended on to respond liberally to the first rays of spring heat, and delight their fortunate owner. The bloom is, in most cases, very large, from two inches across on the *E. Enneacanthus*, to five and six inches, the purple bloom of *E. Engelmanni*, the pink flowers of *E. Pectinatus*, and the grand yellow blossoms of *E. Dasyacanthus*, easily attaining that size.

Once established, they are easy to care for if the one essential of perfect winter rest is attended to. This spring, during the months of April and May, the Echinocereus section of our greenhouse, after not receiving a particle of water from October until the following March, was a magnificent sight, some large clusters having 50 to 100 flowers open at once, completely hiding the plant. It cost a lot of plants, ruined by too much water, and a lot of unsuccessful seasons, caused by neglecting the resting term, before this lesson was finally and sufficiently impressed on our mind, but we have a grand stock on hand now, in excellent condition.

Cultivation.—These plants require a more sandy soil than the Echinocacti, the proportion being two-thirds very coarse sand to one-third loam. Even this should be below the surface, and allowing the plant itself to rest on clear sand, the coarser the better. They will do well in the hottest situation and the dryer corner of the conservatory, and need never be thoroughly watered even in growing season. Those that stand water best are so marked in the descriptions following.

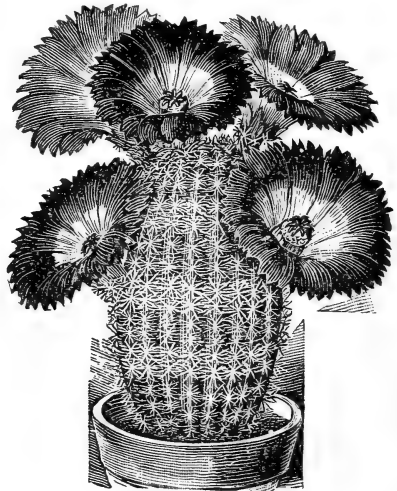


E. BERLANDIERI.



E. CHLORANTHUS.

E. Acifer.—A small variety with few spines in style of *E. Procumbens*. Plant a pea green, flowers a purple shade, $2\frac{1}{2}$ to 3 inches. Water freely in summer. Price, 25c.

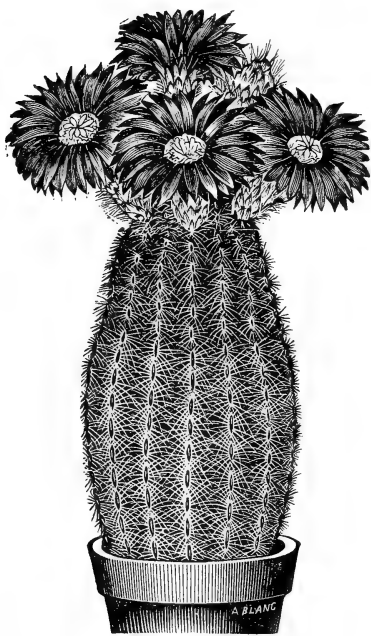


E. CANDICANS.

E. Candicans.—The Rainbow Cactus, so called from the way in which the spines are colored in circles round the plant, shading from yellow to bright red alternately. Called *Cereus Rigidissimus* by some writers from its rigid and prim appearance. Its beauty lies not only in its bright colored spines, but in its handsome flowers also. The color of the large flower (5 to 6 inches) is an outer circle of purplish pink, shading to white, and merging into green in the center. Found in Northern Mexico, along the Arizona boundary. The supply is uncertain, but every effort is made to keep up the stock. Needs little water and very sandy soil. Price, 25c to \$1.00.

E. Chloranthus.—A slender, upright plant with pretty spines, a combination of white and purple in color. Flowers a greenish shade borne abundantly. Found near El Paso, Texas. Water carefully. Price, 25c.

E. Berlandieri.—The smallest grower, and one of the finest bloomers of the class. The illustration shows a small plant, not more than two inches in height and in a 3-inch pot, with four large flowers open at once. The color is bright purple, shading to white in the center. A most excellent sort, standing more water than most others. Being a dwarf sort, plants are small. Price, 25c to \$1.00 for old plants.

**E. COESPITOSUS.**

E. Coespitosus.—The Lace Cactus. The cut shows the plant well, and also its free blooming habit. We consider it the easiest to manage and

most satisfactory of the class. Found in Texas in quite a large district. Stands water well in growing season. Price, 25c to 75c.

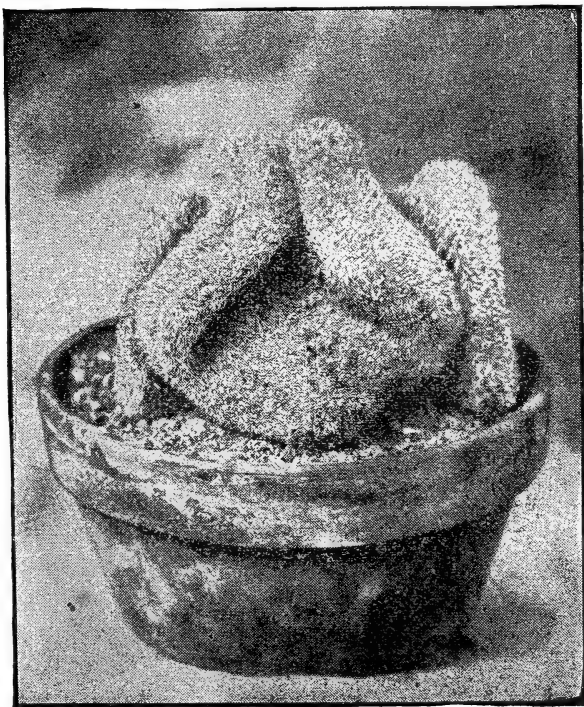
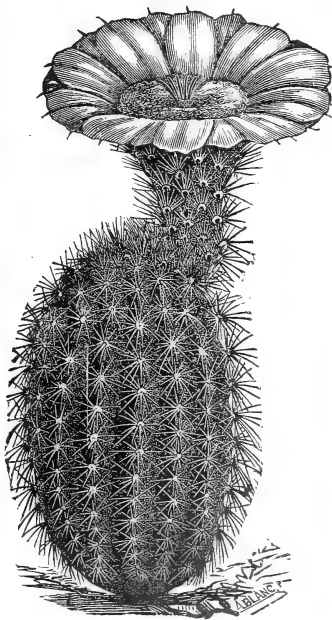
E. Coespitosus Cristata.—The very finest novelty it has been our privilege to secure and introduce. A cristated form of the Lace Cactus; it is very lovely in its coxcomb shape, twisted and with its delicate lace-like covering of spines. It was originally found by one of our collectors in Central Texas, and has been carefully nursed, grafted and divided till we have quite a number of fine specimens now ready for the fanciers who want the newest and finest introduction to Cacti collections. No other dealer has this splendid novelty, and we have sent only one specimen to Europe at a long price, and owing to its extreme rarity, we can not promise many plants as yet, but will do our best to further increase our stock by continuous grafting, so as to supply all who desire it, with at least a small grafted specimen. We have several stock plants which we do not care to dispose of, but can now furnish a number of well grafted specimens, or nice small plants on their own roots, at \$5.00 each. First orders will be given the preference, and if your order cannot be filled at once, we will return your money, or book it for filling in rotation as soon as plants are prepared.

A few larger plants, a matter of correspondence.

**E. CONGLOMERATUS.**

E. Conglomeratus.—Northern Mexico, and sometimes found in Texas near El Paso. Grows in a close mass, and is quite handsome with its long, white spines. Flowers are a pretty shade of lilac. Will not stand much water. Price, 25c to \$1.00.

E. Conoideus.—A neat grower, not large, and with regular spines of black

**E. COESPITOSUS CRISTATA.****E. DASYACANTHUS.**

and white mixture. Fine bloomer, flowers purple and nearly six inches across. A native of Southern Arizona. Needs careful watering. Price, 25c to 50c.

E. Ctenoides.—Called Early Bloomer, from near El Paso. One of the most susceptible to water, and must be kept almost dry the year round. Flowers creamy white, borne freely. Price, 25c.

E. Dasyacanthus.—Very much like *E. Candicans* in form, only lacking the brilliant color of spines of the latter. Its bloom, which is very large, is a fine yellow, getting lighter towards the center and turning to green. A splendid plant grown with other sorts. Will stand water in summer, but wants its winter rest. Price, 25c to 75c.

E. Engelmanni.—From the Mohave Desert, and named for its discoverer, Dr. Engelmann. A plant of great beauty, as its spines show great contrasts, on some plants being a creamy color, on others almost jet black, with red and white admixed, and others still with a variegation of red, white, brown, yellow and red. Spines are long, and a plant requires a large amount of space to pack for shipment. Its flowers are also very fine, six inches across, of a rich purple shade. It has three distinct sections. *E. Eng.* Var *Albispinus*, creamy white spines, *E. Eng.* Var *Variegatus*, variegated spines, and *E. Eng.* *Chrysocentrus*, black spined. Water carefully. Price, 50c to \$1.00.



E. ENNEACANTHUS.

E. Fendleri.—Of the *E. Conoideus* type, but with longer spines. Fine purple flowers six inches across. Water carefully. Price, 35c to 50c.



E. PECTINATUS.

E. Pectinatus.—Only differing from *E. Coespitosus* by having a short central spine and bearing a larger flower, which instead of shading to a light center, darkens to a deep purplish color. Very handsome and desirable. Water carefully. Price, 25c to 50c.

Be sure to add a number of names as second choice, to be sent in case we are out of any of those asked for.



E. Pectinatus, Grafted.—Same as above grafted on a strong *Cereus*, on which it makes a fine growth and large bloom. Price each 75c to \$2.00.

E. Phoenicius.—The form which *E. Enneacanthus* merges into as it extends northward into Arizona. Spines are longer and finer, and flowers a much darker, velvety shade of red. Forms dense heads two feet across. Stands water well. Price, single plants, 35c; larger clusters, \$2.00 to \$4.00.

E. Polyacanthus.—The stoutest growing one of this class, single heads being often six inches in diameter, and 16 inches high. Forms a finger mass when old. Flowers are larger than *E. Enneacanthus*, and a lighter shade of salmon red. Plants are heavy. Water carefully. Price, 50c to \$1.00; large clusters, \$3.00 to \$10.00.

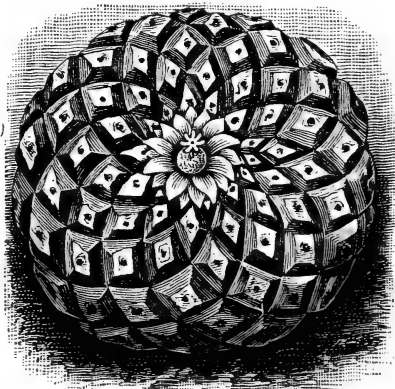


E. PROCUMBENS.

E. Procumbens.—Like *E. Berlandieri* in growth, but larger. Flowers purple. Price, 25c.

E. Stramineus.—Like *E. Conglomeratus*, long, straw colored spines. Flowers a purplish pink. Price, 35c to 50c.

E. Viridiflorus.—In form very much like *E. Chloranthus*, but much more brilliant in color, a deep blood red being the predominating color of the spines. Found from Southern Arizona, around El Paso, to Colorado. Old plants require careful watering. Hardy. Price, 25c.



E. TURBINIFORMIS.

ECHINOPSIS.

This group of Cacti, which has been classed sometimes as Echino Cacti, and at others as Cerei, are distinguished from others by their long tubular or trumpet-shaped flowers, which open at night, and in some cases last for two or three days. Their ease of management, and prolificacy, has made them more popular and generally met with than any other Cactus. Use a soil about half loam and half coarse sand, and when the plant seems to fill the pot with roots, it can be repotted into a larger size. If the offsets are kept picked off, the plant is more likely to bloom.

E. Cinnabarina.—A Brazilian species, so dark green as to be almost black in color. Spines rather compressed, curving upward to the top of the plant. Flower unknown. Stock very limited as yet. Price, 50c.

E. Duvalli.—The Policeman's Club, growing upright, sometimes 2 feet high. This season plants of this variety give a great abundance of bloom, even the smallest plants, two years old, blooming freely. Flowers white, good sized, and more lasting than some others. Price, 15c, 25c to \$1.00.



E. EYRIESII.

E. Eyriesii.—A Mexican sort, and the one most generally cultivated. When grown in good sunlight, is very neat in form, the spines being very short, and ridges even. Flowers most freely, a pure white bloom that opens at sundown. Keeps on flowering all summer. Price, 15c, 25c to \$1.00.

E. Eyriesii Cristata.—A cristated form of above, of which we have only a few specimens at present, but expect to increase shortly, when the price will be, for grafted plant, \$1.00.

E. Leucantha.—The nearest to the Echinocactus in appearance. Ridges are rounded, and have the spine nests quite wide apart. A pea green color, but flower unknown. Price, 50c.



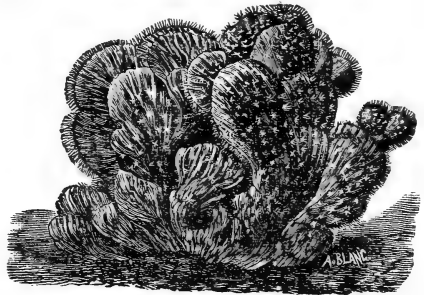
E. MULLERI.

E. Mulleri.—The favorite of the family from its neat form, and because its flowers, which are larger than any other Echinopsis, are a delicate rose pink, and if set away from the sun will last for two days. Very small plants, only two years old, will often bloom, and a large bed of Echinopsis will keep on blooming all summer and be a sight worth seeing. One evening this season, we

counted 45 blooms at one time in a space 3 feet square in the Echinopsis section. **E. Mulleri** is one of the very best. Price, 15c, 25c, to \$1.00.

E. Mulleri Cristata.—We have one very fine plant of this cristata form, but none for sale yet.

E. Multiplex.—Very similar to **E. Mulleri**, the difference being too slight to make a description necessary. Flowers pink. Price, 15c, 25c, to \$1.00.



E. MULTIPLEX CRISTATA.

E. Multiplex Cristata.—The illustration shows the wonderfully contorted and twisted form one of these plants will assume. They grow exactly as shown, but are still too scarce to meet the demand, even at a high price. When in stock, price, 25c to 50c.

E. Oxygona.—From Brazil, very much like **E. Mulleri** in form and spine, but flowers are different. The tube is covered with red and green scales, and the petals are bright rose, shading to nearly white towards the center of the flower. Price, 25c to 50c.

E. Pentlandii.—A pretty species, with tuberculated ridges, but not yet bloomed in our greenhouse. Scarce. Price, \$1.00.

E. Turbinata.—Lately received in small plants, not well known as yet. Rather scarce. Price, 75c.

E. Zuccariniana Fl. Rosea.—Quite distinct; very dark green, and with black spines. The pink flower lasts for two days and three nights. Price, 25c.

E. Zuccariniana Fl. Alba.—Same as above, but with a white flower and just as lasting. Price, 25c.

PELECYPHORA.

This is a small plant, seldom more than two inches in diameter, but of a most peculiar formation. The little tubercles are not like those of any other Cactus, looking more like scales or the backs of some long insect. This feature has given the plant the name, "Hatchet Cactus," the tubercles being supposed to resemble the back of a hatchet. Two varieties are listed by dealers the difference being very slight. We list—



P. ASSELIIFORMIS.

P. Asseliformis.—Always scarce, found in Southern Mexico. Very free bloomer. Flowers bright purple or lilac, opening in bright sunshine, and closing in the middle of the afternoon for several days. Price, for good, well shaped and established plants, \$1.00.

EPIPHYLLUMS.

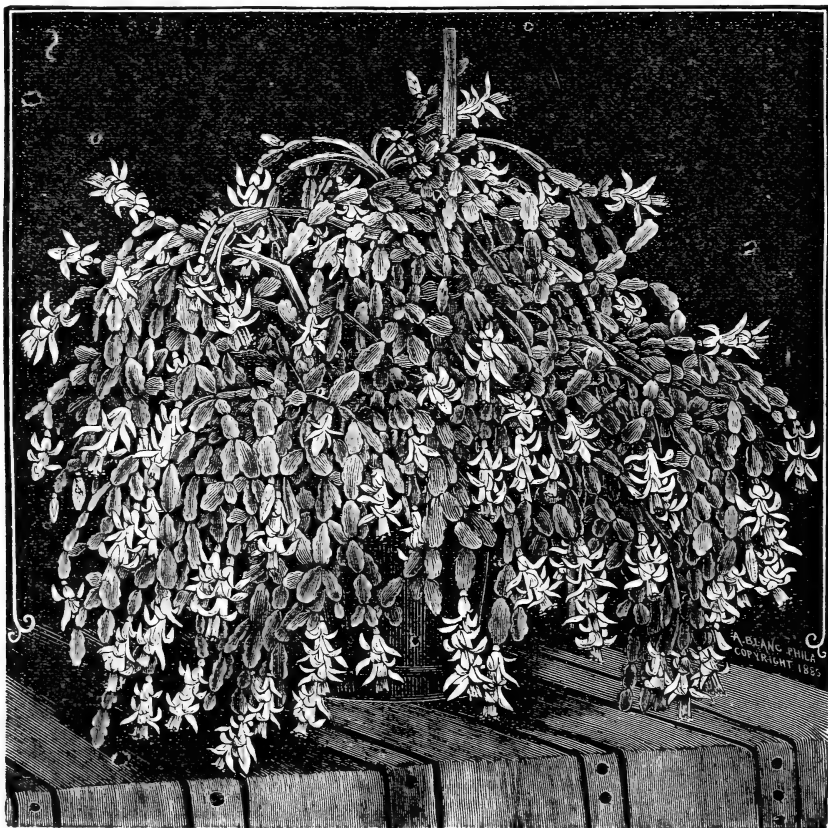
Mr. Watson, in his "Cactus Culture," gives such a nice description of Epiphyllums that we take the liberty to quote from him verbatim. He says: "It is now about a century since some of the most beautiful Cactaceous plants came into cultivation in this country, and among them was the plant now known as *E. Truncatum*, but then called *Cactus Epiphyllum*; the name *Cactus* being used in a generic sense, and not, as now, merely as a general term for the Natural Order. Introduced so early, and at once finding great favor as a curious and beautiful flowering plant, *E. Truncatum* has been, and is still, extensively cultivated, and numerous varieties of it have, as a consequence, originated in English gardens. We do not use the seeds of these plants for their propagation, unless new varieties are desired, when we must begin by fertilizing the flowers, and thus obtain seeds, which should be sown and grown on till the plants flower.

"Epiphyllums have already 'broken' from their original or wild characters, and are, therefore, likely to yield distinct varieties from the first sowing. In the forests which clothe the slopes of the Organ Mountains, in Brazil, the Epiphyllums are found in great abundance, growing upon the trunks and branches of large trees, and occasionally on the ground or upon rocks, up to an elevation of 6,000 feet. It was here that Gardner, when traveling in South America, found *E. Truncatum* growing in great luxuriance, and along with it the species known as *E. Russelianum*, which he sent to the Duke of Bedford's gardens, at Woburn, in 1839. These two species are the only ones now recognized by botanists, all the other cultivated kinds being either varieties of, or crosses raised from them.

"The character by which Epiphyllums are distinguished from other Cactuses, is their flattened, long, slender branches, which are formed of succulent, green, leaf-like branches, growing out of the end of each other to a length of from three to four feet. As in the majority of Cactuses, the stems of the Epiphyllums become woody and almost cylindrical with age, the axes of the branchlets swell out, and the edges disappear or remain attached like a pair of wings."

Epiphyllums get many common names, such as Crab Cactus, Lobster Claw, Inch Cactus, Christmas Cactus, Easter Cactus, etc., and under whatever name they are known, they are general favorites. Not having originally grown in soil, but on tree trunks, a very open soil is best for them; leaf mold and light loam is a good mixture, with perhaps a little moss put in, too. Perfect drainage is the most essential point, and the plant very quickly shows whether the soil suits it or not by either standing still or making a good, vigorous growth. They are, however, best grown as grafts, using *Pereskia*, or tall stems of *Cereus* as stocks on which to put them. They then make double and treble the growth they would on their own roots.

As they make their growth in the summer, and bloom in the winter and early spring, they do not require as much resting period as most Cacti, only needing a short rest to ripen the summer's growth in the fall, and watering may again commence as soon as the buds appear.



E. RUSSELIANUM.

E. Gaertneri.—The Easter Cactus, quite different from the other Epiphyllums in the character of its bloom, the flower being more like those of the Phyllocactus family, to which group it is claimed by some authorities the plant properly belongs. Having the jointed stems of the Epiphyllums, and same manner of producing its flowers from the ends of the joints, it seems to be better kept in this class. It also differs in its season for blooming, being at its best about Easter, getting the name "Easter Cactus" from this feature. Flowers are a bright red, opened out flat and closing in the evening, to again open in the morning for several successive days. Stock is quite scarce as yet. Price, grafted plants, \$1.00.

E. Russelianum.—The Crab Cactus, or Christmas Cactus. The general favorite for Christmas blooming. Too well shown in the illustration to require description. Flowers a beautiful shade of crimson and white, of the shape of a Fuschia somewhat. Price, small plants 15c; larger, 25c to \$1.00. Grafted plants for quick effect, on strong Pereskia stock, 50c to \$2.00.

E. Truncatum.—Lobster Claw, very much like E. Russelianum in growth, but leaves have little points along the edges and outer ends that give rise to the name Lobster Claw. Flowers are a fine shade of carmine, with white throats, and come a little earlier in the season than the Christmas Cactus. Price, 15c, 25c, grafted 50c to \$1.00.



E. MAKOYANA.

E. Makoyana.—The illustration is a faithful representation of this plant. Where E. Gaertneri has a hairy appearance at the ends of the old joints, this has none, but the style of growth and flowers are the same. In fact, we consider this the finest plant, and the best of the Epiphyllums. Flowers at Easter, and an old plant in our collection has had several hundred of its large red flowers on it one time and plenty of its branchlets had 5 and 6 flowers crowded on one leaf. Will bloom first year from a graft, and continue every year after to make rapid growth and annual bloom. We have a good stock of this splendid variety in strong grafted plants, all ready for immediate effect. Price, grafted on strong Pereskia stock, 50c, 75c and \$1.00. On its own roots, 25c.

Manderson, South Dak.—The plants came all right Sunday morning. I must say that I am more than pleased with them. I don't see much use of making a selection, for I have not one of the plants that you sent me, I think.—Edgar M. Keith.

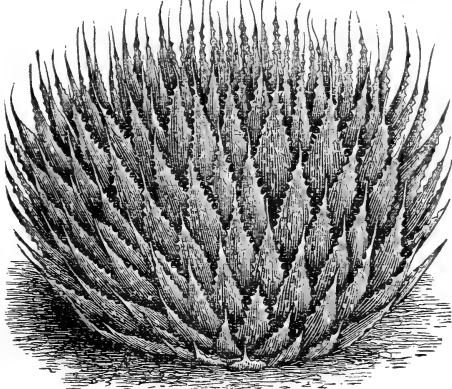
Erie, Penn.—I received the cactus this P. M. and in reply would say I am very much pleased with the same, and many thanks, and you may depend on me for more in the near future.—Mrs. Ph. Hausmann.

Be sure your full address is on your order, and please add some names as second choice, to be sent if any of the first selection is out of stock.

ALOES.

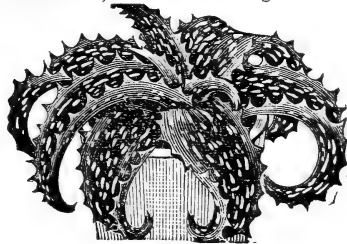
Quick growing succulents of great merit for ornamental effects. Good fresh colors, each variety being quite distinct from the rest. Great favorites on account of their easy and rapid growth, they soon making fine specimens and giving their offsets freely. No Cactus collection is complete without a nice selection of Aloes. Any light, well-drained soil suits them well, must be loose, as they make very heavy roots that grow very fast.

A. Africana, fine tall sort	15c	.50
A. Arborecens	25c	.50
A. Brevifolio, blue color, fine	25c	.50
A. Citiris, the only climbing Aloe	25c	.50
A. Grandidentata, extra good sort	25c	.50
A. Ferox, rare African plant	50c	.50
A. Hanburyana, beautiful glaucous blue....	25c	.25



ALOE LONGIARISTATA.

A. Longiaristata	50c	1.00
A. Mitraeformis, handsome dark green....	50c	1.00



ALOE PICTA

A. Picta, like picture, nicely spotted....	15c	.50
A. Striata, green, streaked white	50c	1.00



A. VARIEGATA.

A. Variegata, dark green, white marking.	15c	.50
A. Vera, largest grower of all	15c	1.00
A. Vulgaris, like Vera in style	25c	.50

EUPHORBIAS.

These plants, with their thorny, fleshy stems, drought-resisting qualities, and habit, seem to be properly classed with Cacti, though they are an entirely different species. Doing well under the same treatment as Cacti, and being an exceedingly interesting and curious family of plants, a collection of Cacti seems to be really incomplete without them. In form they are as diversified as the Cacti, some of them being very slender and quick growing, like *E. Antisyphillitus* and *E. Candelabra*, of which the branches are not much larger than a straw, to the immense columnar sorts found growing so extensively in South Africa, but which are seldom seen in cultivation. Then, too, there are globular sorts, such as *E. Meloformis*, *E. Globosa*, and *E. Caput Medusae*. With forms following so closely those of the Cacti, the relationship seems to come closer than would at first seem; but besides the form, many of the Euphorbias have the spiny appendages of the Cacti to a high degree, the *E. Grandicornis* possessing heavy, thorn-like spines that would be a credit to almost any of the Echinocactus or heaviest spined species of Cacti. However, here the resemblance ends, for the stems are of a quite different quality, being tougher and not so fleshy, and having a thick, white juice that flows freely if the plant is cut, and is of a gummy consistency when dry. Some of the family have real leaves that are persistent, staying right along if the treatment is not changed, and some bear quite pretty flowers that are worth careful study with the microscope. The favorite for blooming purposes is the *E. Splendens*, or Crown of Thorns.



GROUP OF EUPHORBIAS.

1. *E. Candelabra*. 2. *E. Havenensis Cristata*. 3. *E. Grandicornis*. 4. *E. Lactea*. 5. *E. Triangularis*.

E. Grandicornis.—The finest of all Euphorbias, a massive grower, of good branching habit, immense spines and quick growth. The central plant in illustration. Stock hard to propagate, but of easy growth once it is rooted. Price, small plant, \$1.00.

E. Grandidens.—A miniature reproduction of *E. Grandicornis*. Valuable on account of its quickly forming a dense, well shaped bush. Stock limited. Price, \$1.00.

E. Granti.—A fleshy stemmed branching sort, bearing leaves that are beautifully veined in light green. Quite a favorite plant in collections. Price, 25c.

E. Lactea.—As seen in the engraving, this is a fine growing plant. It is thorny and the stems are oddly and regularly marked with white. An extra good sort. Price, \$1.00.

E. Mamillaris.—Called by many the "Corn Cob" Cactus, from the resemblance its stems bear

E. Antisyphillitus.—A quite satisfactory sort and the most slender grower in the collection. Makes a fine cluster two feet high, not branched, but each stem coming from the common base. Has a peculiar habit of bloom, the pretty little white and brown flowers seeming to spring out of the side of the stem in a very odd fashion. Found in Coahuila, Mexico. We have a fine stock of this plant. Price, 50c.

E. Candelabra.—Its branching habit is seen in illustration, which shows the form very true to nature. Once established soon makes a fine specimen. Price, rooted plants, 35c.

E. Caput Medusae, South Africa.—A peculiar shaped plant that forms a little round globular stem from which grow long drooping arms or branches, the ends of which enlarge and again form globular stems, which will root and form new plants. Very rare. Young plants are the long stems rooted. Price, 75c to \$2.00.

E. Cereiformis.—Like the tall Cerei in growth, and instead of spines it has long, fleshy appendages that take the place of leaves, and drop off as the plant grows older. Price, \$1.00.

E. Coerulescens.—Makes a fine branching plant, the younger stems being a fine shade of blue. Very spiny, and one of the very best sorts. Like all Euphorbias, it luxuriates in a hot situation and wants lots of water in growing season. Price for well rooted plants, \$1.00.

E. Globosa.—Small growing, of a globular form, each branch developing a neat little ball of the size of a filbert and bears an odd green flower quite freely. Price, for rooted plant, 50c.

to an ear of corn. A free branching sort, easier to propagate than many others, hence lower in price. A good plant, price, 35c to \$1.00 for large plant.

E. Nerifolia.—With an almost round stem, very much tuberculated, each protuberance bearing a pair of stout spines. Price, 75c to \$1.00.

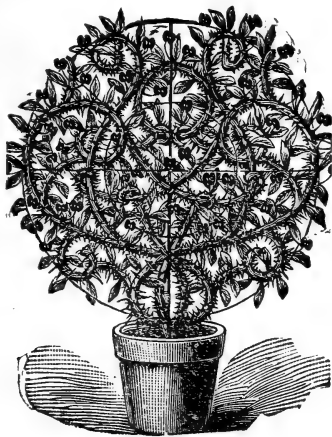
E. Ornithopus.—Of similar growth to *E. Globosa*, but stems are elongated greatly. Quite rare. Price as yet, 75c to \$1.00.

E. Pendulaformis.—A slender stemmed sort that throws out long jointed stems three or four feet, that will either do for a hanging basket, or train on a ladder or trellis. Price, 50c.

E. Pulcherrima.—The "Poinsettia." A nice bushy plant with large leaves that turn a bright red in fall when frost strikes them. Pretty red flowers. Price 25c.

E. Splendens.—The "Crown of Thorns," said to be a native of Palestine. Its stems are round

and very spiny, with a good covering of leaves while growing, but which drop off if the plant is allowed to dry out. A fine, persistent bloomer, never without flowers from fall till late spring. Can be trained into all sorts of fantastic shapes. We have a lot of fine plants at 25c, 50c, and \$1.00 to \$3.00.



E. SPLENDENS.

E. Triangularis.—From Cuba, a pretty three-sided, much-branched plant, of rapid growth. Stems nicely mottled light and dark green. Price, 75c to \$1.00.

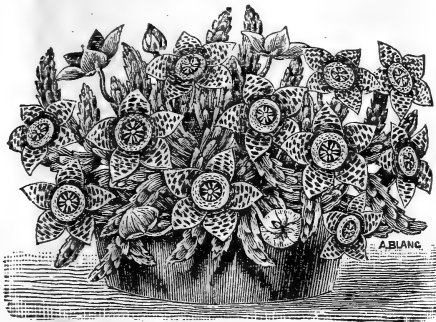
E. Xylophyloides.—Growth resembles a slim-stemmed Phyllocactus. Very rare. Stock limited. Price, \$1.00.

Always name some extra plants in selecting Euphorbias, as stock is limited and we are apt to be out of some asked for.

STAPELIAS.

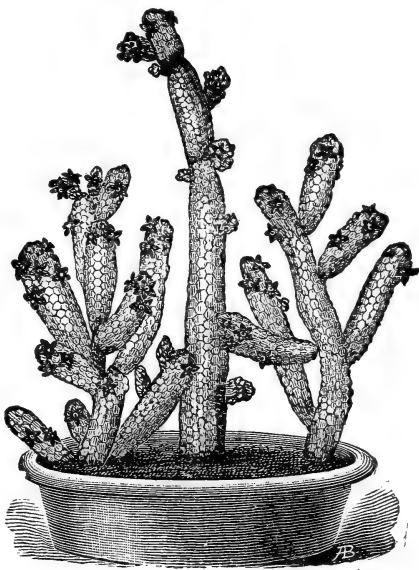
Not Cacti, but classed with them. Very interesting on account of the extremely odd flowers.

They differ very slightly in form, the chief difference being in the flower, which are very striking and peculiarly colored, being sometimes of a tan color, spotted with blotches of maroon, and sometimes dark red and covered entirely with soft hair. Their odor is unpleasant, but the strangeness of the bloom more than makes up for it.



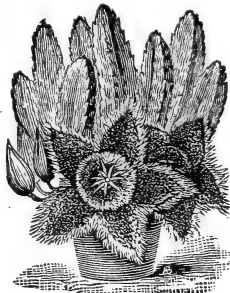
STAPELIA VARIEGATA.

S. Alba Arborescens	50c
S. Angulata	25c
S. Atrata	50c
S. Atropurpureus	25c
S. Citriolata	25c
S. Citrata	25c
S. Europea	75c



STAPELIA ISOMOENSIS.

S. Gigantea	50c
S. Globosiae	25c
S. Grandiflora	25c 50c
S. Hirsuta	50c
S. Imricata	25c
S. Ismoensis	25c 50c
S. Longifolia	50c
S. Marmorata	50c
S. Mutabilis	50c
S. Natalensis	25c
S. Rubens	25c
S. Rufscens	25c
S. Scutellata	50c
S. Variegata	15c 25c



STAPELIA GRANDIFLORA.

PERESKIA.

The only Cactus having leaves. Used as grafting stock. Very rapid grower. We list three varieties:

P. Aculeata	10c to 50c
P. Bleo	25c
P. Zinnafolia	25c

SEMPERVIVUMS.

We grow 25 varieties, including S. Californica, Citiatum, Cornutum, Dichitamm, Haworthii, Lindene, Tectorum, 25 cents each.

Newark, N. J.—The Cacti which I ordered arrived safely and in good condition a few days ago.—M. L. Granniss.

MAMILLARIAS.

A most interesting group of small globular plants, usually forming clusters of many heads, but sometimes remaining obstinately single and reaching a size in some cases, as *M. Nogalensis*, of six to seven inches in diameter, the opposite of this being the tiny *M. Micromeris*, that is blooming size when no larger than my lady's thumb. While there is not a very great variation of form to a casual observer, yet the student finds a good collection of these pretty Cacti well worthy of close study, discovering as he will that many varieties are sharply distinct in form of tubercle and plant. The spines, too, are a leading feature of these cushion-like little gems, and give every species a distinctiveness that lends to the charm of growing a large number of *Mamillarias* together. On many of them the flower is a great surprise, and often seems entirely disproportionate to the size of the plant. Some notable examples are *M. Pectinata*, *M. Echinus*, *M. Macromeris*, *M. Daemonoceras*, etc., while others bear a neat, star-like bloom in great abundance, that adds greatly to the appearance of the plant. Their home is in America, and comprises an immense stretch of country, the *M. Montana* being found abundantly on the low sand hills of the Canadian Northwest, and other members of the family being found as far south as Chili, South America. Several hardy sorts, resembling each other quite closely, are natives of the Northern States, and are all splendid bloomers, bearing large flowers in all shades of crimson and pink. Almost all of the finest and rarest sorts are found on the mountain sides in Mexico, some of them only rarely met with, after long and arduous search.

Cultivation.—The *Mamillarias* do best in a very sandy soil, about one-half coarse sand sifted from gravel, and one-half light loam. They are very easy to manage, in most cases seeming quite content wherever situated. However, if best results are desired, fresh growth, new spines, and bloom, the sunniest situation is the one for the *Mamillarias*. While growing they can be watered freely, if in good drainage, but need rest in winter if bloom is expected. All of the varieties that increase by offsets are easily propagated by separating the little plants from the parent stem, and they generally have already formed roots when taken off. Growing from seed can be done, but is too slow except as an experiment, and for the interest they excite as they gradually develop. The main supply has to be imported from their native homes, as no other source can be depended on.



M. APPLANATA.

M. Applanata.—An easily grown sort from Texas and Northern Mexico, of flat cushion-like form. Flowers are white, striped with mauve, but the chief beauty is the bright red seed pod that comes at about the same time as the flower. Price, 25c to 50c.

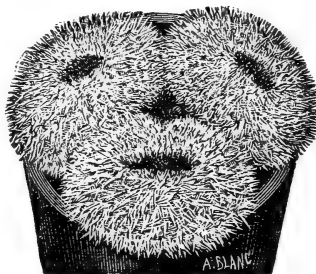
M. Arizona.—Northern Arizona, collected on the sides and tops of tremendous ravines. An exceedingly spiny sort, the stiff brown spines giving it a handsome appearance. Makes fine large clusters and bears a crimson flower 1¾ inches across. Price, 25c to \$1.00.

M. Bicolor.—From Northern Mexico, on high mountains. Very neat and compact in form, with a close network of white spines, the main centrals tipped with black. Flowers are pale rose, and seed pods bright red. A fine sort. Price, 40c to \$1.00.



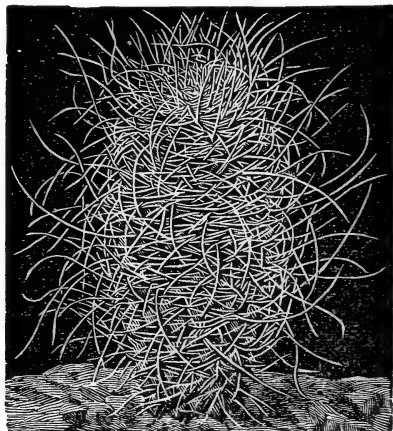
M. ARIZONICA.

M. Bocasana.—Central Mexico, has been called "Fairy Queen," from its dainty appearance, being densely covered with fine silky hair, from which projects a delicate black spine, ending in a decided hook. A persistent bloomer, pretty rose-colored flowers. Rare. Price, 50c to \$1.00.



M. BOCASANA.

M. Cirriferia Longispina.—One of the very best and most distinct *Mamillarias*. From Central Mexico. Grows quite large in single plants, but produces offsets freely. Its peculiarity is its long wavy spines that cover the plant like a crop of very coarse, tangled hair. Greatly admired in *Mamillaria* collections. Price, 50c to \$1.00.



M. CIRRHIFERA LONGISPINA.

M. Cornifera.—Northern Mexico, a gray-looking plant with whitish spines, the central being stout and recurved downwards. A good bloomer, with large purplish flowers. Price, 40c to 75c.

M. Crassispina.—A pretty sort that makes a dense mass of heads $1\frac{1}{2}$ inches in diameter. Spines are white and black, sometimes differing in coloring. Flowers small but abundant; color deep rose. Price, 25c.

M. Candida.—Mexico, one of the handsomest of the species. Is densely covered pure white, soft, harmless spines. Is full blooming size at 2 inches diameter, and besides blooming freely, bears bright red seed pods, which give the plant a pretty appearance, nestling in the snowy spines. A cheap sort. Price, 25c.

M. Carnea.—Northern Mexico, a distinct sort with tubercles tapering suddenly to a point from a large diamond shaped base. Spines reddish purple. Getting scarcer of late years. Collectors sending in but few plants. Price, 50c to \$1.00.



M. ECHINUS.

large and a rich yellow color. A good sort and cheap. Price, 25c.

M. Echinata.—Distinguished by the same character spine as the foregoing, but a much handsomer plant. The spines, in a spreading rosette, are white, while the central is a jet black, making a fine contrast. In form it is $1\frac{1}{2}$ inches in diameter and reaches a height as a single plant of 6 to 8 inches. Often found in fine clusters. Northern Mexico. Flowers large, deep lilac; extra nice plant. Price, 40c.

M. Elegans.—Much like *M. Bicolor*, but less flattened and lighter in color of the spines which are usually pure white, when grown in a conservatory. One of the very prettiest little gems of the family. Flowers small, bright carmine. From Central Mexico. Priced elsewhere at \$1.00, but on account of having received a large shipment, can sell fine plants at 40c to \$1.00.

M. Elephantidens.—Central Mexico. Quite unlike the usual run of *Mamillarias*, in the form of its tubercles, which are very large, looking like a bunch of big acorns crowded together, each armed with a nest of short spines. Flowers are a creamy white and very fine. A very desirable and choice sort. Price, 50c to 75c.



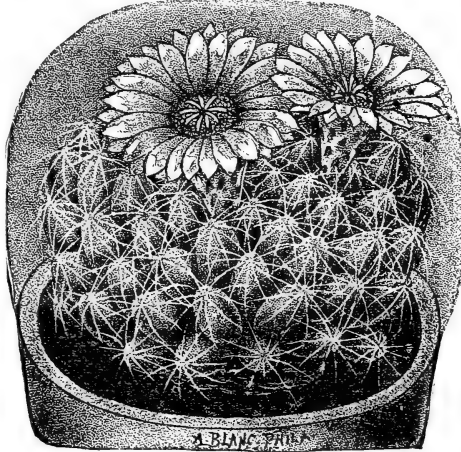
M. ELEPHANTIDENS.

M. Erecta.—Southern Mexico, one of the upright growing sorts, often making clusters two feet across, single heads being $2\frac{1}{2}$ to 3 inches in diameter. Valuable on account of its fine yellow spines, which contrast well with others. Flowers are yellow with a reddish tinge, borne abundantly on top of the stem on young growth. Quite scarce. Price, nice small plants, 75c; larger, \$1.00 to \$2.00.

M. Eriacantha.—In form very much resembles *M. Echinata*, but spines are yellow and more abundant than on the latter. Southern Mexico. Price, 50c to \$1.00.

M. Fulvispinus.—Mexico. A beautiful variety, covered with a close mass of pure white spines tipped with black. Flowers a satiny rose color, very pretty. Has always been hard to secure in sufficient quantities. Price, 50c to \$1.00.

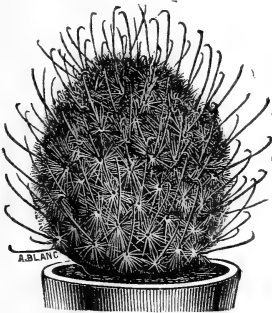
Always make a second choice to enable us to fill orders promptly, if first choice is out of stock.



M. DECIPIENS.

M. Decipiens.—A Texas variety that is a most satisfactory sort, easily grown, and a free bloomer. Flowers a pale greenish yellow, very large, followed by bright red fruit, used by the Texans to make jelly. Price, 20c to 50c.

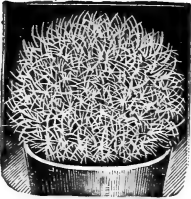
M. Daemonoceras.—Not specially attractive except when in bloom. Flowers very large, creamy white; a better plant than it looks. Price, 35c.



M. DIOICA.

M. Dioica.—Found at the extreme southwestern corner of the United States. One of the best sorts native to this country. Neat globular form, mostly single, with very prominent hooked central spine. Flowers cream colored and star-shaped. seed pods one inch long. bright red. Price, 35c to 50c.

M. Donati.—Central Mexico; dark green. fine bloomer, with very dark scarlet flowers, borne in rings near the top of the plant. Grows to one foot high in single specimens. Price, 75c to \$2.00.

**M. FULVISPINUS.**

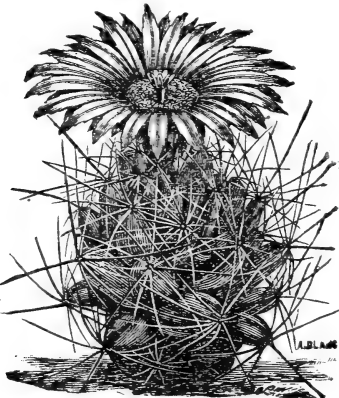
pink. Price, 50c to \$1.00.

**M. GRAHAMMI.**

M. Grahammi.—A very pretty species found in Arizona. Covered with a network of fine white spines and having a long black central spine, very slender and hooked at the end. A rarely seen plant in collections, but highly valued where obtained. Flowers a pale rose yellow, star-shaped. Price, 25c to 50c.

M. Heyderi.—Same form as *M. Applanata*, but differs somewhat in having only the stout spines of the latter without the background of white laterals. Price, 25c to \$1.00.

M. Impexicoma.—Arizona gives us this neat *Mamillaria*. Spines are spreading, closely compressed to the plant, and variegated white and black or brown. Flowers are a deep rose or purplish shades. Price, 25c.

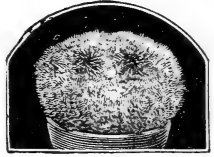
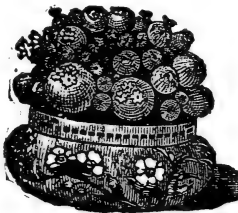
**M. MACROMERIS.**

M. Macromeris.—Of a loose growing appearance, owing to the great length of its tubercles, which support its very long black spines. Flowers

are a fine purplish carmine and extra large. Found near El Paso, Texas, and in Northern Mexico. This plant objects greatly to being moved when growing and should be sent out in an almost dormant state and then set on dry sand in good sun to root, giving almost no water at all till roots form. It objects very strongly to water, and rots rapidly if decay sets in, being very soft in its nature. With dry treatment makes a fine plant. Price, 50c to \$1.00.

M. Lasiacantha.—Mexico. Thought by many collectors to be the gem of their *Mamillarias*, and it really runs the best of them a chase for first honors. Its beauty is its spines, which are unlike those of any other Cactus, neither being of a heavy nature nor of the stiffness of ordinary spines, but the exact counterpart of the feathers of a bird, each a little separate and perfect plume in itself, sometimes called *M. Plumosa*. Needs only to be seen to excite the enthusiasm of any one in its snow white garb of feathers. In a class by itself. Makes a large cluster. Price, 25c to \$1.00.

M. Lassomeri.—Mexico. A particularly neat form of the *M. Elegans* type, lateral spines are white, and the two centrals a golden yellow, contrasting well. Small scarlet flowers. Price, 50c to \$1.50.

**M. LASIACANTHA.****THE BUTTON.****M. MICROMERIS.**

M. Micromeris.—The pretty and popular Button Cactus; covered with a fine network of spines, so soft that there is no danger of the slightest inconvenience in handling them. Beautiful in any size, from the little fellows half an inch in diameter to the largest clusters. Even the smallest bloom freely, a delicate white flower, worthy of the plant, followed by long, red seed pods. Needs careful watering until well established.

Price, 25c to \$1.00 for clusters.

M. Micromeris Greggii.—An enlarged edition of the foregoing, larger in size, spines, flower, seed pod and clusters. Have a very fine stock of this from nice single plants, at 25c to 50c, to \$1.00 and \$2.00 for large clusters.

M. Minima.—A small growing sort with white spines, making many little offsets, which are easily knocked off and take root without any trouble. Flowers are of good size, creamy white. No collection is complete without this. Price, 15c to 25c.

M. Missouriensis.—Colorado to Missouri. Quite hardy in any exposed situation. Good for use in a bed of hardy Cacti. Flowers light yellow. Price, 25c.

M. Montana.—Another hardy sort, with brownish spines, contrasting well with *M. Missouriensis* in the color of its flower, which is a deep pink, nearly two inches across. Price, 15c to 25c.

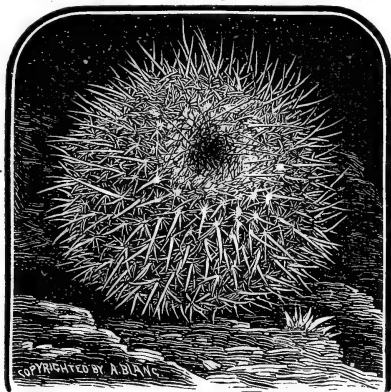
M. Multiceps.—Often called the "Lace Cactus," from the delicacy of its spines. Grows in clusters of stems about the size and length of a man's finger. In early spring bears hundreds of cream-colored flowers, which open in sunlight. Indispensable in collections. Price, 20c to 50c.

M. Nickelsii.—Unattractive in itself, but possessing a fine flower, bright yellow, with red center. Northern Mexico. Price, 25c to 50c for large single specimens.

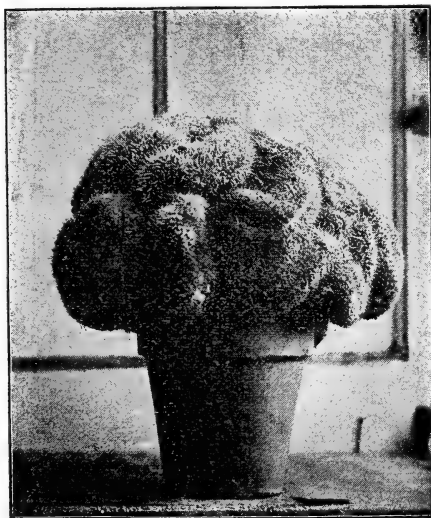
M. Nogalensis.—From Nogales, Southern Arizona. One of the largest of the *Mamillarias*, attains a size of 6 to 8 inches in diameter as a single plant, and forms dense clusters in form of a mound two or three feet across. Handsome on account of its yellow spines, of very regular habit. Price, 25c to \$1.00.

**M. NUTTALI.**

scarce variety. Makes a mass two to three feet across. Price, nice small plants, 60c to \$1.00.

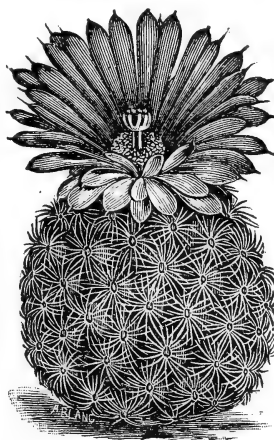
**M. NIVIA.**

M. Nivia Cristata.—The plant that every fancier wants, but which is so hard to obtain. A cristated form of the foregoing, well shown in the photograph, which was taken from a magnificent specimen in our collection. We have a few grafted plants, well established, that we can offer at \$5.00 each.

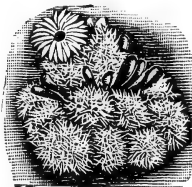
**M. NIVIA CRISTATA.**

M. Pectinata.—Native of Southern Texas and northern part of Mexico. One of the real satisfactory kind on account of its neat form and

very large and beautiful flowers. Color a clear yellow. Extra good sort and cheap. Price, 25c to 50c.

**M. PECTINATA.**

P. Pfeifferi.—An exceptionally valuable plant from Central Mexico. Most useful on account of the fine yellow color of its spines, and its ease of management. Grows to a good size as a single plant, 6 to 8 inches high. Heads often branch and become double-headed. Flowers small, dark magenta. Price, 25c to \$1.00.

**M. PUSILLA.**

M. Pusilla.—Very pretty little plant found along the border of Texas and Mexico. Mixed with the slender gray spines is an abundance of short soft hair that gives the plant a downy appearance. A good bloomer at all sizes, from a little single specimen one inch in diameter to a large cluster a foot or more across. Flowers pale yellow, followed by a long bright red seed pod. A good kind and cheap. Price, 20c to 50c.

M. Potosina.—Of the same symmetrical form as M. Nicholsoni, and a handsomer sort in the estimation of many. Spines are shorter, yellow, and there are very numerous fine, radial spines that cover the plant. Tubercles short, and set in a thick growth of a wooly substance. Flowers small, magenta. Old plants become double-headed. Price, 50c to \$1.00.

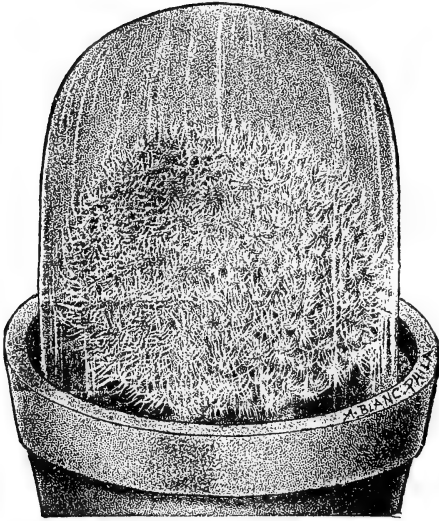
M. Recurvata.—Central Mexico. One of the finer sort; very dark green with short stubby tubercles, spines short except the stout central spine, which is very distinctly recurved. Flowers yellow. Easy to manage. Price, 50c.

M. Rhodantha.—The description of M. Pfeifferi fits this plant, except that the spines are brown. Price, 40c to \$1.00.

M. Sanguinea.—Unlike any other Mamillaria except Spinosissima, in style of spine, which are as thick and even as a bristle brush. Added to this singular feature is the fine color of the spines, a deep purplish red. On some the spines are much longer than on others. A rare sort from Central Mexico. Hard to procure. Well worth the price, \$1.00.

M. Senilis.—Almost identical with M. Bocasana. Has the same silky white spine covering, the difference being that this plant has several long slender hooked spines, where the M. Bocasana has only one. The illustration shows this gem grown under a glass covering. Price, 50c.

M. Tetrancistra.—One of the newer introductions from Mexico. Its characteristics are very striking, making it a good distinct sort for the collector. Not expensive. Price, 25c.



M. SENILIS.

M. Longimama.—Mexican. A most decidedly distinct species, its long tubercles being its special feature and giving rise to its name. Price, 25c.

M. Sphacelata.—Southern Mexico. Slender up-right growers, with gray or black spines, often almost spineless. Makes a good sized cluster, and has a purple flower. Price, 50c.

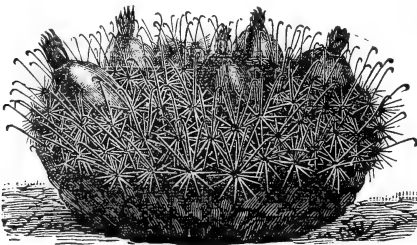
M. Spinosissima.—Southern Mexico. Of the same brush-like appearance as *M. Sanguinea*, only spines are yellow, and never longer in different specimens. Very highly valued in collections for its extreme oddity. Price, 50c to \$1.00.

M. Stella Aurata.—"Golden Star." Southern Mexico. One of the very neatest and prettiest of the Mamillarias. Gets its name from the bright golden heads the young growth forms. Stems are slender, and branch freely, soon forming a fine cluster. Flowers are pale yellow, freely produced. No better sort for amateur or professional. Price, 25c to 50c.

M. Tuberculosa.—A good deal like *M. Stella Aurata* in manner of growth, only stems are stouter, and spines are white. Clusters freely, and blooms continually. Flowers, lilac, about one inch across. One of the best Texas Mamillarias. Coming from the region round El Paso. Price, 25c.

M. Uncinatus.—This Mexican variety always attracts attention on account of its compact form and fine, stout, hooked central spines. Tubercles are short, color very dark green, spines black, and flowers white with purple stripes. Price, 40c to 75c.

M. Viviparus.—Colorado. A hardy sort, with good spines and a fine bloomer. Spines show a good contrast of black, gray, and blood red, quite showy, while the flowers are 1¾ inches across, rosy carmine, very free bloomer. Price, 25c.



M. WRIGHTII.

M. Wildeana.—A very small growing sort, but one of the select Mamillarias; has pretty yellow, hooked central spines, and is a marvel for the profuse way in which it produces its pretty little yellow flowers. Quite scarce. Stock limited. Price, 50c.

M. Wrightii.—Central Mexico. Like the foregoing, this has hooked central spines, but they are very weak, and black in color. The lateral spines are white, making a pretty combination. A small grower. Flowers purple. Price, 50c.

The Mamillarias are largely used in miniature collections and if allowed to select from those of which we have a surplus, we will send 10 Mamillarias, all different, in small sizes, for \$1.00.

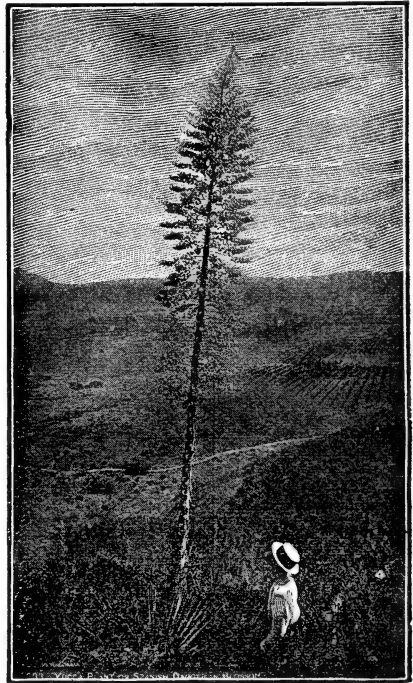
Sedums.

Fine hanging basket succulents, mostly quite hardy, enduring the hottest situation cheerfully.

S. Acre, fine foliage	10c
S. Aureum, yellowish leaves	15c
S. Carneum, variegated, white and green	10c
S. Lydium, moss-like	10c
S. Populifolium, hardy, 4 inches	25c
S. Rupestre, ginger plant	10c
S. Sieboldi, money plant	15c
S. Sieboldi, variegated	15c
S. Spathifolium	15c
S. Spectabilis, garden variety	15c
S. Spectabilis, Bicolor	15c
S. Virens Coxcomb	25c

Yuccas.

The Spanish Dagger. Stands all kinds of neglect, and is a specimen that improves with age.



YUCCA BREVIFOLIA IN BLOOM.

Y. Augustifolia	25
Y. Aloefolia	15
Y. Aloefolia, variegated	50
Y. Aloefolia, var Aurea	1.00
Y. Brevifolia	15c
Y. Filamentosa (hardy)	15
Y. Filamentosa seed, per pkt	10
Y. Brevifolia seed, per pkt	10

OPUNTIAS.

The Opuntias, or "Prickly Pear Cactus," are of the class of Cacti most commonly met with in the countries which produce the spiny, succulent stemmed plants. They cover large fields with an impenetrable mass of their heavy or slender branching growth, affording sure and safe shelter to the reptiles that abound in the district, and which are perfectly safe from pursuit in their natural home.

As the land in some parts is cleared up and utilized as pasture land, the Opuntias are made use of to form fences, that will turn the most courageous animal, soon becoming an immense hedge eight or ten feet high, and often as wide. *O. Tuna* is the sort most commonly put to this use, as it grows rapidly and has very long, stout spines. That many of the Prickly Pears are quite hardy, is evidenced by the wide extent of country over which they have spread, from Paraguay, South America, to the Northwest, and Rocky Mountain district of Canada. The writer has found little patches of stunted-looking Opuntias on the sand hills in Manitoba, of the variety *O. Missouriensis*, and farther west and on the Rocky Mountain slopes, this variety is found very plentifully. Here the temperature in winter often reaches 50 degrees below zero, but that does not affect these hardy plants. However, all are not so hardy; those found in the equatorial countries being tender and easily hurt by heavy frosts. In form they vary greatly, some, like *O. Frutescens*, and *Fulvispinus*, being of very slender growth, branching freely, and soon becoming pretty bushy plants, while others like the *O. Tuna*, *Monacantha* and others grow in very large round or elongated flat joints, borne one upon the other, the main stem becoming round and woody with age, and single plants taking a tree form. Still others have cylindrical stems, sometimes branching and tree-like, and sometimes prostrate or of creeping habit, rooting wherever they touch soil, and making a dense mass. Of the cylindrical tree formed sorts, *O. Lurida*, *O. Arborescens*, *O. Imbricata*, *O. Serpentina*, *O. Prolifera*, etc., are types, and *O. Prostrata*, *O. Brachyarthra*, *O. Clavata*, *O. Emoryi*, *O. Parryi*, etc., types of the cylindrical prostrate forms. All the Opuntias have a fleshy sort of leaf that comes on young growth on the spine nests, but which drop off when the spines become formed. This is the distinguishing feature of the Prickly Pears, very much more marked on some varieties than others, as *O. Sublata*, on which these peculiar growths are often two inches long, and persistent, staying on the plant a long time, and will take root if taken off and set on sand. The flowers of the Opuntias are very fine, borne freely, and the large tracts of them in the South are described by those who have seen them as a brilliant and gorgeous sight when in bloom. The prevailing colors are yellows, often with crimson centers, and fine pinks and reds. These are followed by the fruit, in all sizes, from as large as a bean to the size of a large pear or lemon. Being almost invariably covered with spines, they have given the name "Prickly Pear" to this family of Cacti. All are edible, and birds and ants devour them greedily, but they are also made use of as food, and are really much enjoyed by the residents of that part of the country. In some places they are brought to the market and sold at a penny a dozen, but it requires an expert to open the burr-like fruit so as to get at the seedy pulp with which the center is filled. The strong growing sorts make a big root growth, and have a good hold on the soil, but here again a difference is seen in the varieties, a number of the Opuntias having decided tuberous roots much like the crown of the asparagus. A good deal of pleasure may be taken from the cultivation of the Opuntia corner of the Cacti collection, on account of their rapid growth, soon making fine specimens and giving their elegant bloom freely.

Culture.—Almost all the Opuntias are of the easiest growth, adapting themselves to nearly any soil they are given. If planted in heavy soil, however, they are more apt to rot off at the root if given too much water, the trouble being in the drainage. It is best on this account to use a good deal of sand in the compost, about half sand and half good loamy soil answering nicely. Put a lot of broken pots, stones, or charcoal in the bottom of the pots, and when planted in this way they will stand quite liberal watering during the summer months. A few sorts require more care in watering than others, more especially the *O. Ursina*, which endures months of absolute drouth quite cheerfully, but sickens and rots almost immediately if given an overdose of water. Some of the heavier varieties make good grafting stock, but not as good as the *Cerei* or *Pereskia*.

O. Andicola.—A new dwarf-growing sort, quite pretty; small rounded joints and white spines. Still scarce, stock limited. Price, 50c.

O. Aurantica.—Slender branching variety from Texas, with white flowers. Price, 25c.

O. Arborescens.—Almost identical with *O. Lurida*, cylindrical stems one inch thick, branching freely and making fine tree-like specimens, flowers bright purplish pink. From Arizona and South into Mexico. Price, 25c to \$2.00 for large specimens.

O. Arenaria.—A small growing sort with round flat joints $1\frac{1}{2}$ to 2 inches. Very spiny, neat style

of plant, flowers yellow, two inches across. Colorado to Mexico. Price, 25c.

O. Auberi.—A Cuban variety of very stout growth, joints 10 to 14 inches long and very thick. Price, 25c.

O. Basilaris.—A very handsome variety found in the Mohave Desert, Arizona. Grows in cabbage form, a great many joints springing from a common base. A fine glaucous green color, apparently spineless, but the little brown tufts dotted regularly over the joints are really made of very fine spines. Not easily obtained, but our collector has sent a fine new lot and we are well stocked. Price, 25c to \$1.00.

O. Basilaris Cordata.—Like above, but is a fine purplish blue color. Price, 25c.

O. Basilaris Albaflora.—Pale glaucous green stems, but a rare sort on account of its large white flower. Price, 50c.

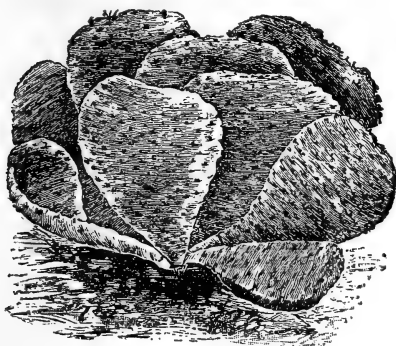
O. Basilaris Coerulescens.—Fine blue stems and very prominent brown spine tufts. Price, 25c.

O. Basilaris Nava.—The last described sort in miniature. A pretty dwarf growing plant. Price, 25c.

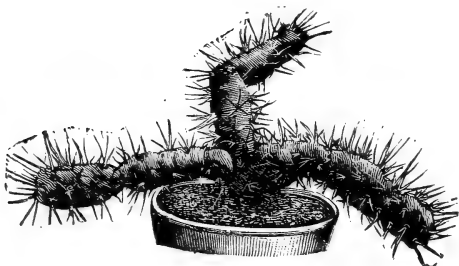
O. Beckeriana.—(New.) From Chili; large elongated joints of a bluish cast. Strongly tuberculated, and with very stout clear yellow spines, as fine as *E. Cac Grusoni*. Stock limited. Price, 25c.

O. Bernardino.—Fine cylindrical stemmed species. Price, 25c.

O. Bigelowii.—Arizona, one of the very finest cylindrical branching sort of Opuntias. It is thickly covered with very long, clear yellow spines, the centrals being enclosed in a glistening yellow sheath. Price, 25c; large specimens, \$1.00 to \$5.00.



O. BASILARIS.

**O. BRACHYARTHRA.**

O. Brachyarthra.—Dwarf growing, prostrate stems. A queer plant from New Mexico. Good satisfactory sort. Price, 15c to 25c.

O. Braziliensis.—Brazil. Very distinct form, has straight stem, round and smooth, with flat branches in a fine tree form. Unlike any other Cactus. New growth very dark green, of a beautiful waxy appearance. Flowers small, lemon yellow. Price, 25c. to \$1.00 and up.

**O. BRAZILIENSIS.**

O. Bulbispina.—(New.) From Brazil. Dwarf sort, with almost globular joints. Attractive brown and white spines. Will be a favorite variety when more plentiful; still scarce. Price, 40c.

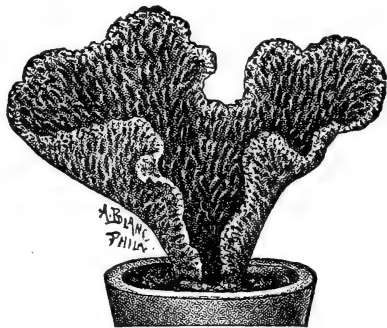
O. Camanchica.—Colorado, round joints, very spiny on upper half. Flowers yellow, fruit large,

pear shaped, and of a purple color. Price, 15c to 25c.

O. Chrysacantha.—Large, heavy joints, very dark green, with bright yellow spines. A handsome sort and good grower. Price, 25c.

O. Clavata.—Northern Mexico, prostrate growing sort, the joints somewhat club-shaped, and armed with very long flat spines; will not stand much water. A pretty plant for a hanging basket. Price, 25c.

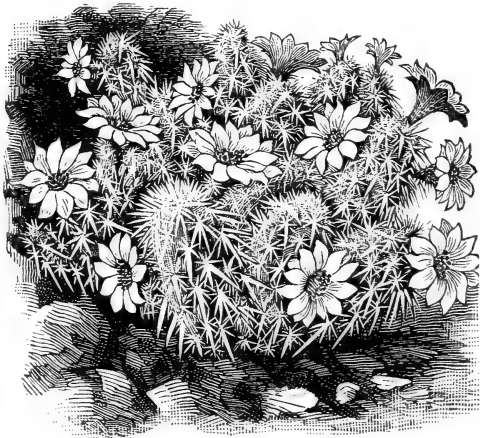
O. Cylindrica.—This is one of the prettiest of the cylindrical Opuntias. Looks like a small Cercus, dark green, fresh color, the stem regularly divided into spindle-shaped tubercles, crowned with a little tuft of fine hair-like spines, the centrals stouter and exceedingly sharp. Price, 25c to \$1.00.

**O. CYLINDRICA CRISTATA.**

O. Cylindrica Cristata.—A cristated form of the above of very peculiar coxcomb-like growth. Stock extremely limited. Cannot quote price.

O. Dearmatus.—From Chili, grows in round globular joints, one above the other, but is entirely distinct in its spine form, the central spines being long, 1½ to 3 inches, and looking like strips of white paper, about an eighth of an inch wide. A rare sort; very scarce as yet. Price, 50c.

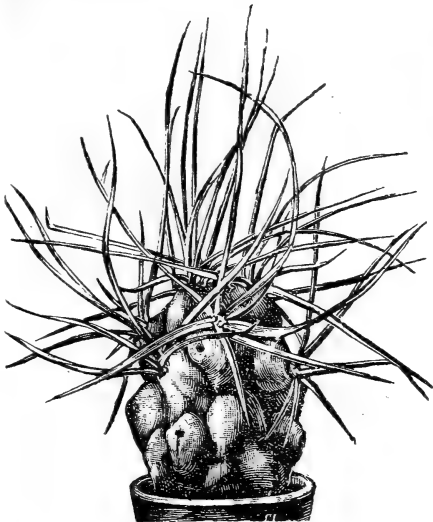
O. Echinocarpa.—Cylindrical stems, one inch thick, the spine tufts very close together, and very difficult to handle except with steel tweezers. Branches freely. Flowers yellow. Native of Colorado. Price 25c.

**O. EMORY.**

O. Emory.—The illustration shows the manner of growth of this pretty species. Spines are white, the central one flattened and depressed downward. Flowers sulphur-yellow. Fruit large, 1½ inches long. From Mexico. Price, 35c.

O. Engelmanni.—Southern California; large round joints with tufts of spines looking like brown velvet but of a very different texture when in contact with your hand. Price, 25c.

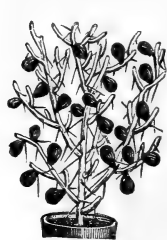
O. Formidabilis.—(New.) From Chili. Well named, for its immense spines which are the equal in length of those of any other Cactus, if not the superior. Stems are round, globular, three inches thick. Spines 4 to 7 inches long on matured plants. Very scarce as yet. Price, small plant, \$1.00.



O. FORMIDABILIS.

O. Fragilis.—Small, round jointed sort, from Colorado. Easily broken apart and the pieces rooted. Price, 15c to 25c.

O. Fulgida.—Southern Arizona and Northern Mexico. Grows in bush form; spine description of *O. Bigelowii* suits it well except that its spines are a pure glistening white. Price, 25c.



O. Frutescens.—Texas. Very slender stems, free branching, rapid grower, and good bloomer. Flowers pale yellow, followed by bright scarlet fruit, one inch long. Price, 15c to 50c; large specimens, \$1.00.

O. Fulvispina.—Of the same slender growth as *O. Frutescens*, but has the additional advantage of having long dagger-like spines, brownish yellow, covered with a bright yellow sheath. A very fine looking plant when a few years old. Rapid grower. Price, 15c to 25c.

O. Horrida.—A hard one to handle, but quite pretty to look at. Stems slender, slightly flattened. Very spiny; breaks easily at the joints. Price, 15c to 25c.

O. Imbricata.—North Mexico. A cylindrical branching sort, of the style of *O. Arborescens*. The stems are very strongly tuberculated, and armed with white spines, the central spine covered with a sheath. Price, 25c.

O. Leucotricha.—Mexico; stems are elongated, flat, and covered with white spines that grow long with age and give the plant a marked resemblance to the Old Man Cactus. Price, 25c.

Columbus, O.—Enclosed find order for cactus with express money order for same. I am well pleased with the plants that I have got from you this season, so am going to try a few more.—John W. Reamr.



O. LURIDA.

O. Lurida.—Description of *O. Arborescens* fits this plant. Flowers are quite double, rose colored, fruit yellow. Price, 25c.

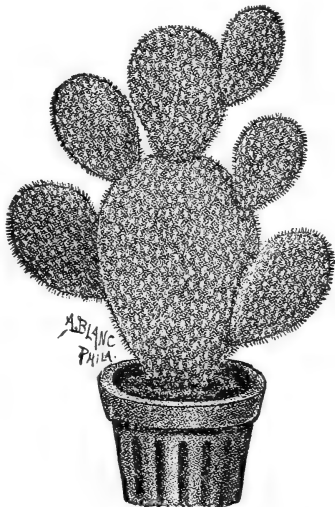
O. Lucasiae.—Low-growing, flat jointed, bluish colored plant. A most magnificent bloomer. Flowers large, clear yellow with red center. One of the tuberous rooted varieties. Price, 25c.

O. Macrohiza.—Small growing sort, joints flat, round, 2½ inches across. Makes a close mass as a specimen plant. Flowers yellow. Hardy. Price, 25c.

O. Mesacantha Cymochila. Colorado.—Rounded joints, very glaucous, upper half well supplied with spines; often 2 inches long. Flowers yellow; fruit purple. Hardy. Price, 25c.

O. Microdasys.—Northern Mexico, and extending into the Southern States. A very beautiful and much valued variety. The rounded joints are thickly dotted with golden tufts of short spines, in symmetrical rows, and are handsome at any stage of growth, even when the stems become old and woody, the spine tufts increase in size and retain their brilliancy of color. Grows to a large size, 2 to 3 feet high in masses. Flowers, lemon yellow, freely borne, followed by oval shaped fruit covered with the character spine tufts. One of the best *Opuntias*. Price, nice plants, 25c to \$1.00.

O. Microdasys Minima.—Same as above, but with smaller spine tufts, and a rather more vigorous grower. Price, 25c.

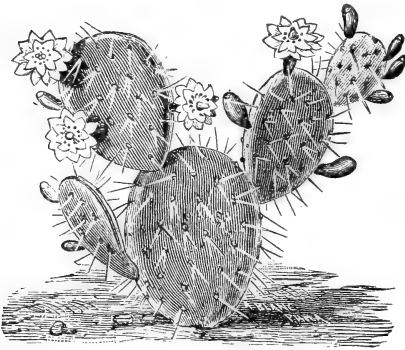


O. MICRODASYS.

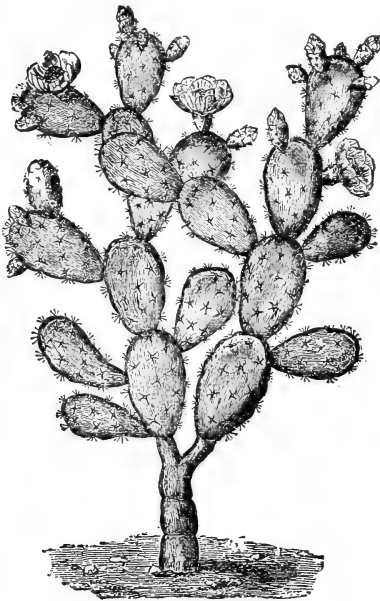
O. Microdasys Rufida.—Same as *O. Microdasys*, but spine tufts are a rich glossy brown, very handsome. Price, 25c to \$1.00.

Louisville, Ky.—The Cacti came yesterday and I am very much delighted with them. They are certainly handsome and "Lecontei" much larger than I had expected. Many thanks for the extra Cactus.—C. C. Brook.

Constant Spring, Jamaica, West Indies.—I received the collection of Cactus in good order and thank you for making the collection as varied as you have. I am much pleased with the lot.—George Loutrel Lucas.

**O. MISSOURIENSIS.**

O. Missouriensis.—Small, hardy sort, rounded joints, exceedingly spiny. Flowers yellow. Price, 25c.

**O. MONACANTHA.**

O. Monacantha.—One of the largest and strongest growers. Long flat joints with solitary gray spines $1\frac{1}{2}$ to 2 inches long. Small flowers, pale yellow, and purple fruit. Price, 15c to 50c.

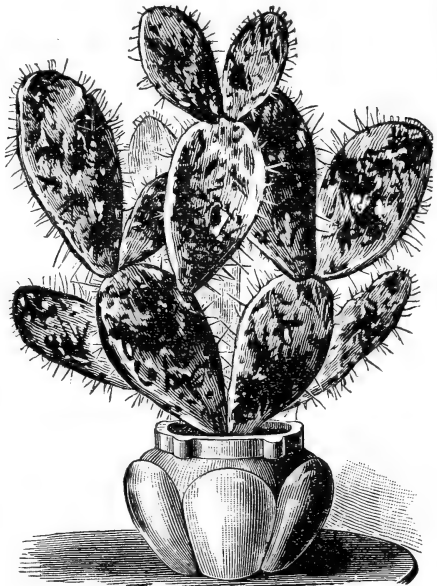
O. Monacantha Variegata.—Same style of growth as foregoing but joints are beautifully mottled and variegated white and green. Young growth is white and pink, turning green with white blotches and veinings through it when matured. Nothing finer or more attractive in the Cacti collection than this great oddity. We are well stocked and offer nice plants at 30c to \$1.00.

O. Papale Cochinellicifera.—Flat joints very much elongated, and few spines. A new variety still scarce. Price, 50c.

O. Papyracantha.—Chili; greatly resembles *O. Dearmatus*, having the same flat paper-like spines. Price, 50c to \$1.00.

O. Paraguayensis.—Paraguay; very long, stout, flattened joints, very dark green, shaded to brown at the spine nests. A rank grower. Price, 50c.

O. Parryi.—Same style as *O. Clavata*, but has longer and more abundant spines. Price, 25c.

**O. MONACANTHA VARIEGATA.**

O. Pheacantha Major.—Colorado; very large, round joints, rather thin, and glaucous, with a purple tinge. Flowers deep yellow; fruit crimson. Hardy. Price, 25c.

**O. PAPYRACANTHA.**

O. Polyacantha.—Round joints, extremely spiny, spines variegated gray yellow and brown. Flowers yellow followed by very spiny fruit. From Colorado. Hardy. Price, 15c to 25c.

O. Polyacantha Albispina.—A variety of the above, but with snow white spines. Price, 25c.

O. Prolifera.—California, one of the handsomest of the cylindrical sorts, stems being $1\frac{1}{2}$ or more inches thick and densely covered with short and very sharp spines. Makes a fine well branched specimen in a short time. Price, 25c to \$1.00.

O. Purpurescens.—A South American species of distinct appearance owing to its dark purple color. Joints flattened and elongated. Very scarce. Price, 50c.

O. Rafinesqui.—A hardy and most satisfactory outdoor bedder any where in the United States or Canada. Is found in all the Western and

Southern States. Very profuse bloomer. Yellow flowers. Price, 15c to 25c.

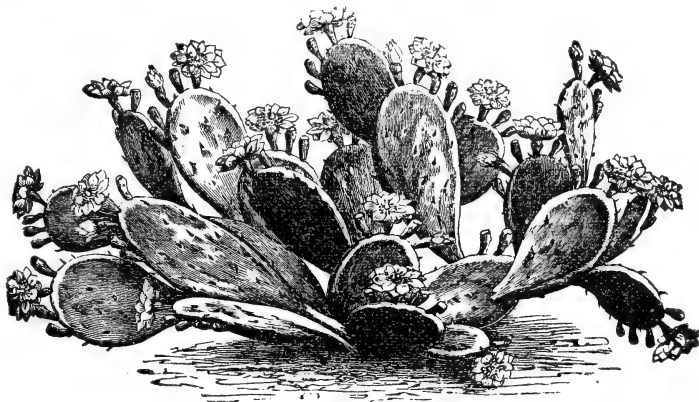
O. Rutilla.—A great favorite found in the Mohave Desert. Low bushy growth, with very white spines like stiff hair. A much finer and rarer sort than *O. Senilis*, the Old Man Opuntia. Flowers double, and a fine deep rose, a most unusual color on flat stemmed Opuntias. Should be in every collection. Price, 25c.

O. Salmiana.—Said to be a native of Japan. A slender round stem, $\frac{1}{2}$ inch thick, branching freely, and a sure bloomer. Flowers creamy

by all collectors who have it. Price, 25c to \$1.00.

O. Tesselata.—Mohave Desert; round stems, about $\frac{1}{4}$ inch thick, branching and shrub-like in growth. Very dry and woody stems, unlike any other Opuntia. One of the oddities of the family; hard to get stock in good condition. Price, 25c.

O. Tesselata Cristata.—If the *O. Tesselata* is an oddity, then this is a hundred fold more so, being a cristated form, assuming little fan-shaped or wide, twisted, coxcomb-like branches.



O. RAFINESQUI.

white, one inch across, tinged with red, followed by bright red spiny fruit. Should be more generally grown than it is, as it is a most satisfactory sort. Price, 25c.

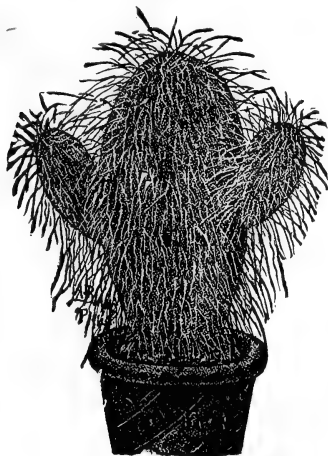
O. Senilis.—Large grower, rounded joints, usually elongated, its spines being pure white and growing 2 to 3 inches in length, making them

A very great curiosity that is never passed by unnoticed, even by people not interested in Cacti. Never reverts to its original form, but grows little cristated branches one on another, and becomes a valuable specimen. Only grafted plants in stock. Price, well established, \$1.00.



O. TUNA.

having hair very plentiful, and often six inches



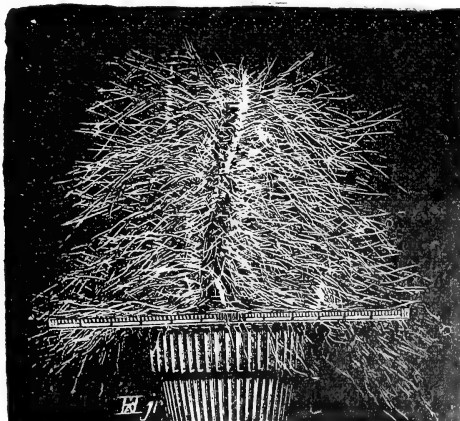
O. RUTILLA.

look like a covering of hair on the plant. Flowers yellow, and very large fruit. The Old Man Opuntia. Price, 15c to 25c.

O. Subulata.—This is a plant that is often classed as a *Pereskia*, looks as fine as a *Cereus*, but appears to belong rather to the Opuntias, having the fleshy growth that precedes the spines in the most pronounced style of any of them. The fleshy growths attain a length of 2 inches, and are much more persistent than usual, often staying on the plant all season. When the spines mature they are long, dagger-like, and forbid a very close acquaintance. Much prized

O. Tuna.—The Prickly Pear that is used for fences and is found in large fields in Texas, New Mexico and Arizona. Very strong grower. Price, 25c.

O. Ursina.—The Grizzly Bear Cactus, found always in almost inaccessible portions of the Mohave Desert. The nearest rival of the Old Man Cactus, and often six inches



O. URSINA.

long. Grows quickly, but will not endure water. Grows best in lime, sand, and broken stone, and kept almost entirely dry. Will stand great heat and long seasons of drouth. Price, 25c to \$1.00.

O. *Vaganata*.—Small cylindrical stems, very dark green. Rapid grower with few spines. Soon makes nice specimen. Price, 25c; large specimens, \$1.00.

O. *Vulgare*.—Hardy sort, found in many parts of the United States. A good variety for the rockery. Flowers yellow. Price, 15c to 25c.

If allowed to select from those of which we have a surplus, we will send ten *Opuntias*, all different, and nicely assorted, for \$1.00.

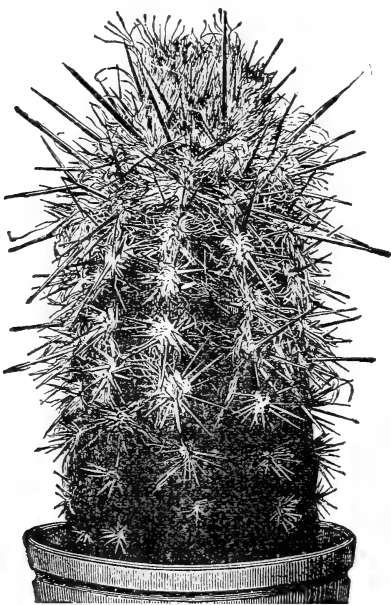
PILOCEREUS

This class of plants is closely related to the *Cereus* family, but as a distinguishing feature they have a covering of hair-like spines, finer on some sorts than on others. All are of stout, columnar growth, reaching a height of ten feet in their home in Southern Mexico. Of slow growth, they must be imported at about the sizes wanted, and the great demand, both in this country and Europe, has made these oddities much scarcer and harder to procure in large quantities than when first introduced. Growing from seed or cuttings is too tedious a job to be depended on for a supply, so that the outlook for future stock cannot be depended on. At present our benches are well filled with a specially fine lot of the Old Man Cactus, well established, and well covered with hair.

Cultivation.—There seems to be a large percentage of lime in the formation of the *Piloceri*, and the compost that appears to suit them best is one-third old broken plaster, one-third coarse sand, and one-third soil. In winter they require rest, but will stand watering freely in growing season, if in good sunlight and with drainage perfect. Shy bloomers, all of them, they seldom bear flowers in cultivation; but this defect is more than made up by their strange appearance.

P. C. *Fossulatus*.—A variety with much less hair than others. It has a fine silky wool growing thickly around the spine nests at the head of the plant. General appearance of the plant is of a dark green *cereus*. Rare sort. Price, \$1.00 and up.

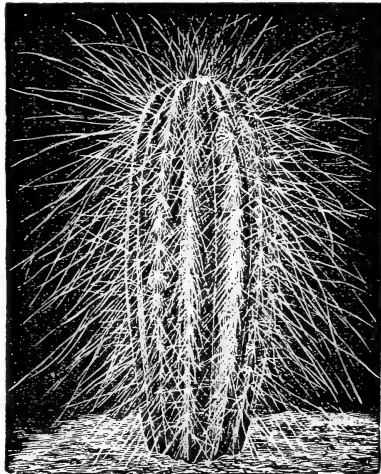
P. C. *Hoppenstedti*.—Rigid stems, with strong woody center. Distinct from others because of its spines being much stiffer than the hair-like consistency peculiar to the species. Price, \$1.00 to \$5.00.



P. C. HOULETTI.

P. C. *Houletti*.—Particularly handsome variety, with beautiful sky blue stems. The edges of the ridges armed with stiff spines, around which is the silky hair, most noticeable at the top or on new growth. Very scarce and highly prized in collections. We can supply fine plants at \$2.50 and up.

Galesburg, Ill.—I received plants you sent me. They were very nice specimens and I thank you; also appreciate your kindness in offering to name plants for me.—A. E. Stromberg.



P. C. HOPPENSTEDTI.

P. C. *Senilis*.—The wonderful "Old Man Cactus." No Cactus collection is complete without this plant, so strange with its snow white covering of long flexuous hair-like spines, that visitors at first refuse to believe it is a living plant. When the hair is divided and the green stem below exposed to view, the expressions of incredulity are turned to wonder. In Europe the demand for this plant is very great, and they are exported from Mexico to dealers in Germany, France, England, etc., in thousands. Our present stock is the finest we ever imported, every plant being a perfect specimen.



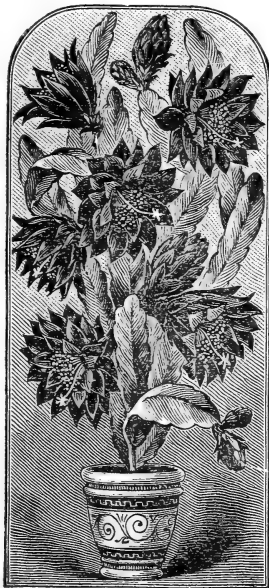
P. C. SENILIS.

men. Price, 75c, \$1.00, \$1.50, \$2.00 to \$5.00.

PHYLLOCACTUS.

The flat leaf or case-knife Cactus, which include the finest and freest bloomers of the Cactus family. There is very little to distinguish between the different species, the color of the flower being the means of identity. Some most magnificently colored blooms have resulted from the work of the hybridizer, principally in Germany and England, where some growers list a very large number of varieties. Our list includes the standards, as well as a number of the most distinct and meritorious of the newer introductions. Of the newer sorts, our stock is as yet quite limited, so in ordering, please select a number as second choice to be sent if the variety has run out.

Treatment.—Plant in a fairly rich soil of leaf mold or rotted sod, with enough sand added to render it loose, and the addition of some old well rotted cow manure will not hurt. Let the plant stay in as small a pot as possible and get well pot-bound to induce free blooming. Instead of repotting, a little of the top soil may be removed and some fresh soil, enriched with bone dust or manure, may be added. This should be done in the early spring before blooming starts. They may be set in a shady situation and kept almost dry during winter and brought to the light in February or early March.



P. ACKERMANNI.

P. Ackermanni, scarlet15c 25c



P. ALBUS SUPERBUS.

P. Albus Superbus, white.....25c 50c
P. Anguliger, white25c



P. LATIFRONS.

P. Latifrons, queen Cactus, white night
bloomer15c 25c
P. Marguerite, white50c
P. Orange Gem50c
P. Peacockii, variegated.....25c
P. Pfersdorff, yellow25c
P. Roseus Grandiflorus50c
P. Roseus Superbus, rose15c 25c
P. Stenopetalus, rosy white25c
P. Wrayi, cream15c 25c

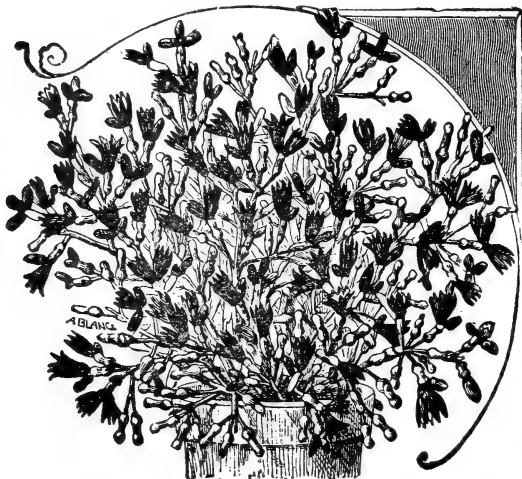
Prices for above are for mailing-size plants, or cuttings which root very easily in coarse sand.

Be sure to give a number of names as second choice in making out orders.

San Marco, Tex.—The plants you sent me are doing well. Every plant grew.—Wm. Nitzsche.

RHIPSALIS.

A pretty little species, easily grown, a shady situation suiting them admirably. Fine in hanging baskets, or with their slender stems trained to supports. There is a great diversity of form, some having tiny round stems, that droop nicely, while others are of a flat stemmed style, much like the Phyllocacti. In the same soil as that recommended for the Phyllos, they all grow quickly and make nice specimens.

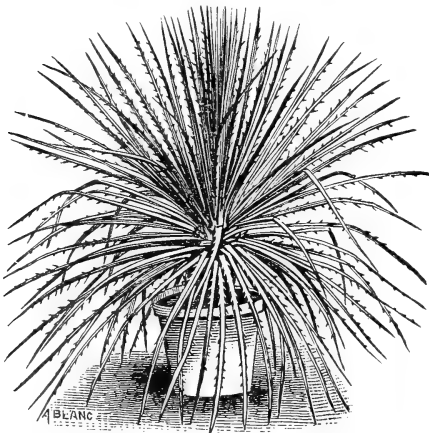


RHIPSALIS SALICORNIODES

- | | |
|--|---------|
| R. Alata, small, flat stemmed,
rare | 50c |
| R. Cassytha, the pretty coral
Cactus, | 15c 25c |
| R. Dissimilis, round stems, stout.. | 50c |
| R. Fasciculatus, round, upright,
new | 50c |
| R. Gibberata, round, short joints.. | 50c |
| R. Lepismium, 3 angled, woolly
stems, rare | 50c |
| R. Mycrantha, round stems, new.. | 50c |
| R. Pendulaformis, stout, trailing.. | 50c |
| R. Pentaptera, 5-winged, stout,
upright | 50c |
| R. Pachyptera, flat, heavy stems.. | 35c |
| R. Paradoxa, stout stems, joint-
ed, odd, | 50c |
| R. Pulviginera, slender, branch-
es in clusters | 40c |
| R. Regnelli, flat, thin stems,
new | 50c |
| R. Rhombea, flat stems, like
Phyllos | 25c |
| R. Salicornioides, queer jointed
stems | 25c |

DASYLIRION.

The illustration shows the fine decorative value of this little known plant. Its long thin leaves are a glossy green, notched along the edges, and quite stiff. More lasting and just as ornamental as a palm. Stands neglect, but shows effect of a little care. Our plants are strong in all sizes. Price 25c for mailing size and \$1.00 to \$5.00 for extra fine specimen plants.



DASYLIRION SERRATIFOLIA.

DeSoto, Mo.—I received the plant you sent me and appreciate your kindness very much. It is a pretty thing and growing nicely. With thanks and best wishes.—Mrs. M. H. Gaylord.

HAWORTHIAS.



H. REINWARDTI.

Pretty little pot plants, like miniature century plants:

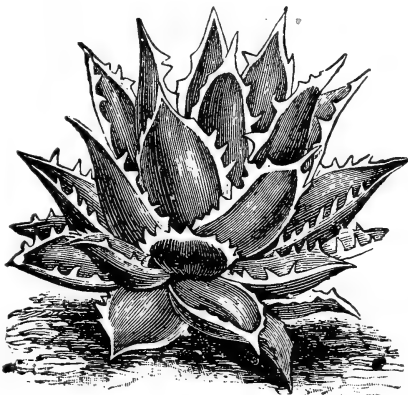
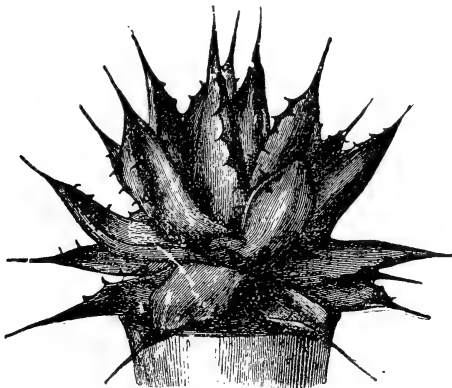
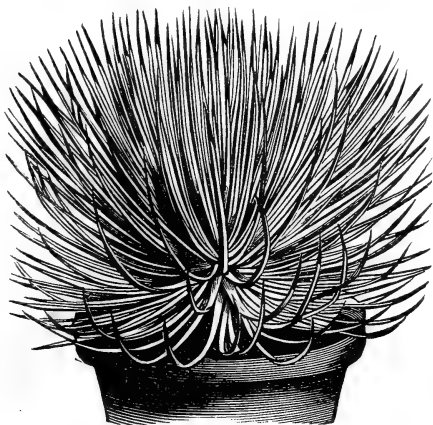
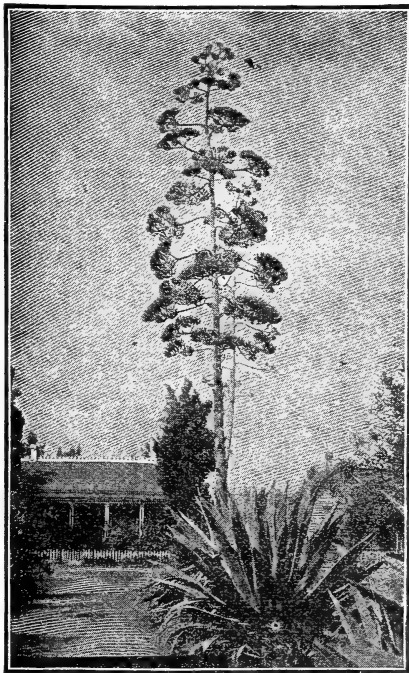
- | | | |
|------------------------------|-----|------|
| H. Attenuata | 15c | 25 |
| H. Coarctata | 25c | 50 |
| H. Cymbiformis | | 25 |
| H. Fasciata | | 25 |
| H. Glabracancolor | | 1.00 |
| H. Margaritifera Longi | | 50 |
| H. Punctata | | 25 |
| H. Radula | | 50 |
| H. Reinwardtii | | 50 |
| H. Rigida | | 50 |
| H. Spicata | | 50 |
| H. Sub-attenuata | 15c | 50 |
| H. Translucens | 15c | 25 |

AGAVES.

The plant so well known as the "Century Plant." Is much used for massive effect as ornamental lawn decoratives or for contrasts in Cacti bedding. There are many quite distinct sorts, a few of the best are listed here. Grow well in any garden soil.

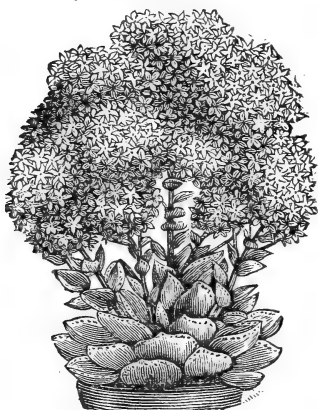
A. Americana15c \$1.00

A. Americana Variegata	15c	\$1.00
A. Americana var Medio Picta	50c	\$1.00
A. Applanta var Parryi	25c	1.00
A. Decipiens25
A. Deserti		1.00
A. Lecheguilla25
A. Maculata25
A. Recurvata25
A. Mulleri Striata	50c	1.00
A. Rigida25
A. Stricta	50c	1.00
A. Salmiana	25c	.50
A. Victoria Regina	50c	3.00

**A. AMERICANA VARIEGATA.****A. VICTORIA REGINA.****A. APPLANATA.****A. STRICTA.****AGAVE AMERICANA.**

The Century Plant in Bloom.

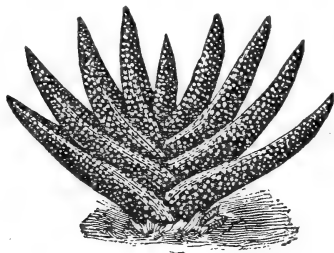
Germantown, Pa.—The plant arrived yesterday, was in good condition and a pleasant surprise, being much larger than I expected. Many thanks.
—K. C. Lampton.

CRASSULAS.**CRASSULA LACTEA.**

C. Cordata. C. Floribea. C. Lactea. C. Lingueformis. C. Lycopodioides. C. Marginatus. C. Perforata. C. Portulacoides. C. Trachysantha. C. Verticulata. Price for any of them 25 cents, except Lactea, 40c.

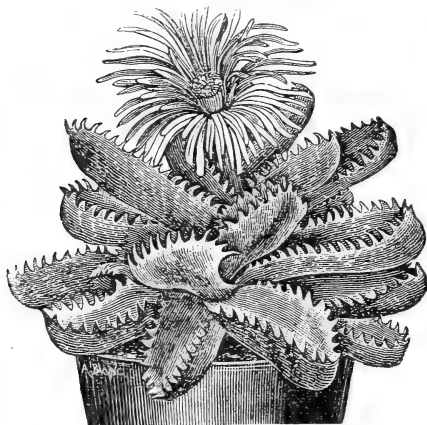
GASTERIAS.

Cut shows general style of these plants.

**GASTEREA VERRUCOSA.**

Good companions to Cacti in the conservatory or window. We list:

G. Apricoides, Abtusifolia, Glabra Major, Linguiiformis, Maculata, Minima, Nitida, Punctata, Trigona, Verrucosa. Prices range from 15 to 50 cents.

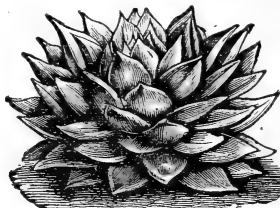
MESEMBRYANTHEMUMS.**M. TIGRINUM.**

Splendid hanging basket plants. Excellent bloomers. We can supply 25 varieties including: M. Acquilaterale, Agavoides, Bulbosum, Caul-escens, Confertum, Cordifolium, Coerulescens, Densum, Echinus, Gnaphalium, Grandiflorum, Hirus, Lehmanni, Lewyer, Lunatum, Orginum, Roseum, Recurvata, Tigrinum. Price 25 cents each.

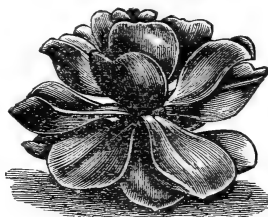
Dyckia, from Brazil.—Grows in style of the Agave, but is a much rarer plant, seldom seen. It has rigid woody leaves, of light green color, in which regular stripes of white make a good contrast. Will please everyone who wants a rare plant with beauty to recommend it as well as oddity. Price 50c.

ECHEVERIAS.

Fine for borders or pot plants for early blooming in the house. Very easy to manage.

**E. AGAVOIDES.**

E. Agavoides, see cut, very rare50c
E. Arborea, grows in tree form10c
E. Glaucasia, pale glaucous blue10c
E. Hoveyii, new, the Opal Echeverias10c

**E. METALLICA.**

E. Mettalica Grandis, finest for effect25c
E. Secunda Glaucia, splendid bedder10c

Kleinia Articulata.

—A peculiar fleshy stemmed plant, very easily grown and bloomed. Stems perfectly round, smooth, and in joints. Flowers freely, bearing a cluster of very odd bloom on a long stem. Price, 10c to 25c.

K. Repens.—Of the same family but has fine, sky blue leaves, very fleshy and pretty. Price, 25c.

K. Spiculosa.—Like Repens, but grows taller, leaves are longer, more pointed and a light gray blue color, nearly white. Price, 25c.

Othonna Crassifolia. Like the Sedums, a very quick growing hanging basket plant. Sure bloomer and bright yellow flowers. Price 10c.

O. Carnosa.

Same as Crassifolia, but much larger foliage and flowers. Price, 25c.

**KLEINIA ARTICULATA.**

CACTI SEED.

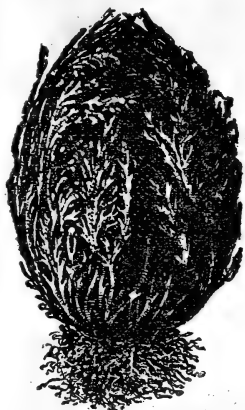
Growing Cactus from seed is a very interesting process; hybridization making it always liable to produce new forms of this wonderful family.

Sow seed in a shallow box or flower pot saucer, only slightly covering them with a sprinkling of sand. Moisten carefully, and lay about an inch of loose moss over them to shade the tender sprouts, never allowing direct sun heat to dry them out till they have taken good root.

LIBERAL PACKET MIXED, 10 CENTS.

DECORATIVE NOVELTY PLANTS.

Okatea Plant.—A great novelty from the Mohave Desert. Stems as hard as bone, but yet having leaves like a rose and very pretty, bright red flowers. Price, 25c to 50c.



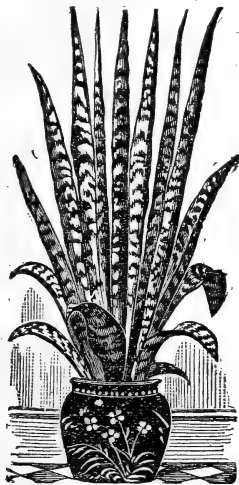
RESURRECTION PLANT.

(In Dry State.)

Growth of any of the succulents. Leaves are like a heavy slab, such as a flattened out egg with sharp edges would appear. Are crowded on to two sides of the stem, fastened about the middle and overlapping each other at the base. Outer color of plant is almost white over a blue ground color, and the flowers, which are borne on long stems, are a pleasing blending of red and yellow, and last for weeks. Price, 25c.

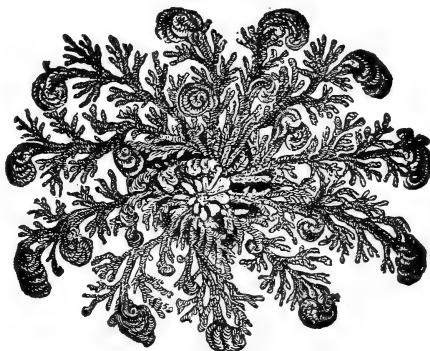
Resurrection Plant.—The “rolling thing before the wind.” Looks like a dried bundle of twigs, but when placed in water will, in a few hours, unfold and become a fresh, green, moss-like plant, very interesting. Can be laid up to dry again, and may remain in that state for years, and if again put in water the reviving operation will repeat itself as before. Price 15c each, 2 for 25c.

Rocoea Falcata.—The strangest plant in form and style of growth of any of the succulents. Leaves are like a heavy slab, such as a flattened out egg with sharp edges would appear. Are crowded on to two sides of the stem, fastened about the middle and overlapping each other at the base. Outer color of plant is almost white over a blue ground color, and the flowers, which are borne on long stems, are a pleasing blending of red and yellow, and last for weeks. Price, 25c.



SANSEVERIA ZEYLANICA.

Sanseveria Zeylanica, Ceylon.—A quick-growing and valuable fibre plant of an exceedingly ornamental character. Leaves are sword-shaped, 4 or 5 feet when fully grown, beautifully mottled with greenish white. Fine plants, 10c to 50c.



RESURRECTION PLANT

(Three Hours After Putting in Water.)



ASPARAGUS PLUMOSUS.

A. Plumosus.—The plant for all places and all purposes. May be used with telling effect in fern dishes, or as a single pot plant; may be trained to grow over windows or small trellises in the house, and above all is almost indispensable as a green in floral decorations. Thousands of yards of its spray are used in making up floral designs. Its fresh green foliage is so graceful and dainty that it surpasses even Maiden Hair Fern in popularity. 10c. Large plants by express, 20c.

A. Sprengeri.—A beautiful variety of this graceful class of plants, especially useful to grow as a pot plant for house decoration or for planting in hanging baskets, where it makes a graceful drooping plant with branches or fronds four to five feet in length, of a rich shade of green, 10c. Large plants by express, 20c each.

Tenafly, New Jersey.—Plants came safely on Saturday. Thank you very much for the extras.—Mrs. Robert Shaw.

BEGONIAS

Flowering Varieties.

Probably the most popular and most satisfactory house plants to be found. They may be grown successfully anywhere, and are ornamental both on account of their bright waxy flowers and clean shining foliage.

We can supply 24 varieties of choice flowering Begonias, at 10 cents each. Any 8 for 50 cents, or the entire 24 for \$1.40, post paid.

Caladiums (fancy leaved).—A class of beautiful variegated foliage plants, excellent for house culture or open ground. They delight in a shady and moist place. The bulbs should be started into growth about the first of April and dried off in October and kept in a warm and dry place until spring again. These are excellent for window boxes, vases or single pot plants, and succeed equally well in a somewhat shady situation out of doors. Price, 20c each; 6 for \$1.00.

PONDEROSA LEMON.

The Largest Edible Lemon in the World

Superb fruit has been taken from the tree weighing over three pounds each. In addition to its fruit-bearing qualities it makes a very handsome specimen plant for house culture. The dark green foliage is very large and handsome, and the pure wax-like flowers with yellow stems are as fragrant as Orange Blossoms, which it greatly resembles. The lemons have very thin rind and are full of rich acid juice. One is equal to eight or ten ordinary lemons. It makes delicious lemonade, and for culinary purposes has no equal. It is of the very easiest culture, flowering and fruiting in any good ordinary soil. Price, for very strong young plants, 10c each; second size, splendid two-year-old plants, 25c each; extra large plants, 50c.

FICUS ELASTICA.

India Rubber Tree.

Nothing better for table or house decoration. Its dark green, shiny foliage is always handsome, and its constitution is such that it is able to stand the excessive heat and dryness of the ordinary dwelling house without injury, 35c; large plants by express, 50c and 75c.



FICUS ELASTICA.

San Marco, Tex.—The plants you sent me are doing well. Every plant grew.—Wm. Nitzsche.



BEGONIA ARGENTEA GUTTATA.

PEDILANTHUS TITHYMALOIDES.

THE BIRD CACTUS.

This strange plant is so called because its pretty red flower is shaped like a little bird with outstretched wings. The plant is really not a cactus at all, but of the Euphorbia family, but has been given the name, "The Bird Cactus," because Euphorbias are always classed with Cacti, and the name has stuck to it. The stems are a fleshy, dark green substance, and give out a milky juice when cut or pricked. They grow in joints, sometimes as crooked as the old fashioned rail fence. Its leaves have a waxy texture and the veins are white and raised on the under side to sharp ridges. The bright red flowers are borne all summer in a succession, coming on the new growth. Is very easy to grow and endures water and good soil if kept loose. Price, nice plants, 25c.

POINSETTIA.

A grand Winter-blooming plant bearing flower bracts a foot in diameter; of the brightest scarlet. Often classed as a Euphorbia. Extra fine 15 cents each; two for 25 cents.

CYCAS REVOLUTA.

Cycas Revoluta (Sago Palm).—These are magnificent plants, of noble, majestic habit and most impressive. They are probably the most valuable decorative plants grown, both for lawn and house decorations. Their heavy glossy, deep green fronds resist alike the gas, dry heat, dust and cold, to which decorative plants are frequently exposed.

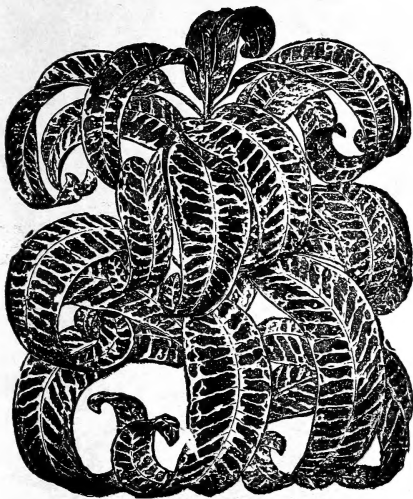
No. of Leaves.	Height Inches.	Price Each.
2 to 4.....	8 to 10.....	\$.50
6 to 8.....	12 to 15.....	1.00

THE KENTIA PALM.

Kentia Belmoreana.—This is one of the finest pot plants imaginable, and the easiest to grow, of any of the Palm family. Being almost hardy, it is not injured by slight changes in temperature, and its stiff, glossy leaves enable it to stand the dry, hot air of the living room without injury. The leaves are a deep, glossy green, fan-shaped, split deeply into segments. This is, without exception, the most hardy of its class. Very graceful for table decoration. It is scarcely equalled, and were we to select one Palm only, it certainly would be a Kentia.

No of Leaves.	Height Inches.	Price Each.
Young Plants.....	2 1/2 in. Pots.....	\$.25
3 to 4.....	10 to 12.....	.50
4 to 5.....	18 to 20.....	1.00

CROTONS.



CROTON VOLUMUM.

Crotons are natives of the South Sea Islands, have been little known in this country till within the last few years, when their ease of growth, great beauty, and wonderful contrasts of coloring, have led to there being a great demand for them, both for the window, conservatory, or outdoor bedding. The leaves are brilliantly variegated in every color of the rainbow and a collection of them is a most beautiful sight.

A grand bedding plant, standing the hottest sunshine, which adds greater brilliancy to their colors. We have 30 distinct sorts, all of which, if planted out in the spring, will make good specimens by autumn, when they can be lifted and potted for the house. Some of them have curled and twisted leaves, very curious in form, even taking a decided corkscrew shape. All who try these plants will be more than pleased with them.

Aucubaeifolium.—Broad and short in leaf; green, with yellow dots and bronze under surface. A standard sort. 15c each.

Aurea maculata.—Narrow, small leaves; green, with yellow dots. Fine for edging a bed. 15c.

Cooperii.—Leaves yellow-vined and blotched changing to red. 15c each.

Cornutum.—Narrow, wavy-margined, dark shining green, mottled with yellow, the midrib projecting at the tip. 15c each.

Dermannianum.—Small, but broad leaves, bronze red, yellow and green. Fine for edging. 15c.

Disraeli.—Trilobed leaves of various shades of yellow and pale green; edges and under surface bright red. 15c.

Illustris.—Leaves with three narrow oblong lobes, golden barred and variegated. 15c.

Interruptum.—Dark purplish green above, crimson midrib. Rather broad-leaved, notched and twisted. 15c.

Irregular.—Medium broad, rather long. Shining green with yellow blotches and midrib. 15c.

Ingomar.—Lovely green leaves, with bright yellow center. 15c.

Makoyanum.—Chocolate and carmine markings. Broad leaves. 15c.

Maxima.—Large, broad leaves, green with brightest yellow markings. 15c.

Majesticum.—Long leaves of yellow, green and red. 15c.

Picturatum.—Narrow leaves. Green, carmine, yellow, orange, etc. One of the richest colored, and valuable for all places—as a specimen for edging, massing, etc. 15c.

Pictus.—Lovely marking of green and orange 15c.

Spirale.—Leaves long, narrow, twisted, striped and marked with yellow, changing to crimson. Rare. 15c.

Splendens.—Broad leaves, richly marked yellow and dull red on a green ground. 15c.

Volutum.—Medium broad, curled leaves. Green with occasional yellow midrib, or sometimes a series of leaves clear yellow. 15c.

Weismanii.—Long leaves, mottled golden yellow. 15c.

Any of the above, 15c each, 4 for 50c.

NEW AND SCARCE CROTONS.

The following varieties of Crotons are quite an improvement over the older kinds, the foliage being more distinctly marked with brighter colors, therefore more attractive. 20c. each, 3 for 50c.

Alice.—Broad leaves of red, yellow and green markings. Beautiful.

Andrianum.—Always scarce. Has broad leaves of red and yellow. Red and pink shade.

Baroness Rothschild.—Broad leaves of bright crimson, yellow and green markings. A very desirable variety. Fine bedder.

Day Spring.—A fine variety that beds well. Irregular markings of yellow and red on subdued green background. As pretty as the highly colored autumn leaves. Fine bedder.

Inimitabilis.—The brightest of all Crotons. Crimson, yellow and green.

Johannis.—The longest leaves of any Croton, with beautiful markings of bright yellow or dark green background.

Maculata.—Oak shaped leaves of deep green with bright yellow markings.

Nestor.—Olive ground. Pink midrib and green spots. Finest of all Crotons. Fine bedder. We have a fine stock of this superb Croton.



CROTON AUREA MACULATA.

Prince of Wales.—Long twisted leaves of yellow, green and red.

Queen Victoria.—A very bright variety. A great favorite and always hard to get. Medium long leaves with brightest crimson, yellow and green markings. Very desirable.

Veitchii.—Yellow, green and crimson. One of the best. Always scarce and much sought after. Fine bedder.

Any of the above, 20c. each or 3 for 50c.

ARAUCARIA EXCELSA.

The most beautiful of all the tender evergreens; admirably adapted to house culture. One of the finest plants for table decorations. Its deep green feathery foliage arranged in whorls, rising one above the other at regular distances, makes it a plant of rare value for house or conservatory decoration. Must be sent by express, too large to mail. Eight to ten inches, \$1.00; fifteen to eighteen inches, \$1.50.

GLADIOLUS CHILDSI.

A distinct mammoth race of *Gladiolus*, much stronger and more vigorous in growth than the ordinary varieties, their stiff stems often standing four to five feet high with flower stalks two feet in length. They bloom freely, many plants producing three to five spikes of bloom. The flowers are of great substance, and of exceptionally large size.

The *Gladiolus* is the most attractive of all Summer-flowing bulbs. By cutting the spikes when two or three of the lower flowers are open, and placing them in water, the entire spike will open in the most beautiful manner. Set the bulbs from six to nine inches apart and about four inches deep. Plant from middle of April till first of June. It is a good way to plant at two or three different times, ten days to two weeks apart. This will give a succession of blooms from July to November.

Boston.—Flaming orange-scarlet, with large, white violet mottled throat.

Columbia.—Light orange scarlet, freely blotched and penciled with bluish purple. Throat freely mottled.

Deborah.—Dark red, tinged with amaranth. Very large pure white throat with white band through petals.

Dr. Sellow.—Large spike and very large flower of great substance. Deep, rich, rosy crimson, slightly penciled darker. Center of petals rayed with white. Throat pure white, mottled and spotted with violet crimson.

Gov. McCormack.—Extra large flower and truss. Beautiful rose, mottled with silvery gray, and with violet and white mottled throat. Very fine, being of unusual beauty and oddity.

Marginata.—Fine salmon, with crimson and white throat, each petal having a delicate margin of slate blue.

Mottled Gem.—Large, spreading flower, showing an unusually large throat, beautifully mottled white, violet and scarlet.

Nezinscott.—Bright blood scarlet, with deep velvety crimson-black blotches and white mottling in the throat.

Oddity.—Deep amaranth red, deeply suffused with purple-blue. Large distinct white marks in red and white mottled throat.

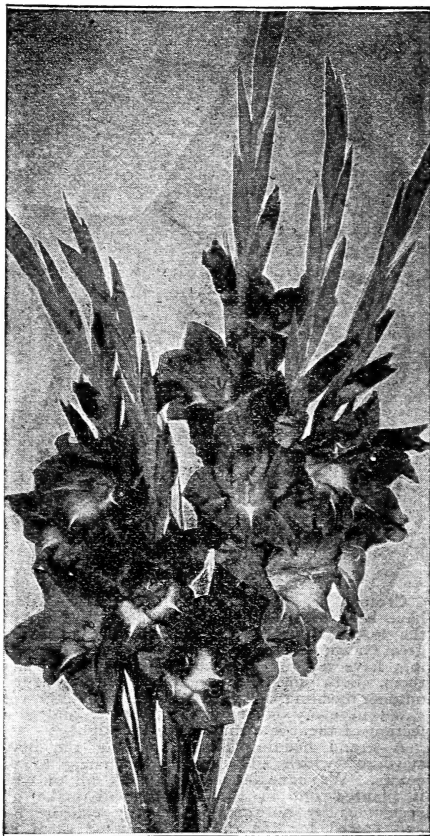
Wm. Falconer.—Spike of great length and flowers of enormous size. Beautiful clear, light pink. Best of its color.

10 cents each; set of 10 varieties for 75 cents.

FINE MIXED GLADIOLUS CHILDSI.

All colors mixed, extra large fine bulbs, 5c each, 50c per dozen.

Umbrella Plant.—This is a plant of the easiest culture, and a large specimen is as handsome as a Palm for decoration. It makes a handsome pot plant, or can be used in baskets or vases, making a charming effect. It will grow luxuriantly in water, and is therefore indispensable for aquariums or fountains. 10c each.

**GLADIOLUS CHILDSI.****OTAHEITE ORANGE.**

A grand pot plant, and one of great beauty and novelty. It blooms most freely during the Winter, though it is likely to bloom at any and all times of the year. The fruit is about one-half the size of ordinary oranges, and very sweet and delicious. Price, 10 cents each, large, strong plants, 25 cents each.

KNOCKS THE MEALY BUG.

So many people have trouble keeping down the mealy bug that loves to hide in the shelter of the thick covering of spines on some of the Cacti, complaining that they either get the cures recommended too strong and burn the skin of the plant, leaving an ugly brown spot, or too weak and of no effect, that we have been experimenting on a preparation that will be safe and absolutely sure in effect, and have found it in

CHILDS' BUG SCORCH,

A jelly-like substance, quickly dissolved in water, easily applied and sure death to the woolly pests. It is put up in convenient sized cans for mailing and there is enough in one can under ordinary circumstances to last for a season. With a can of this on hand, there need be no fear of mealy bug's ravages, and it is also a great assistant in keeping down scale if the latter appears on your plants.

Directions.—For mealy bug, dissolve a teaspoonful of Bug Scorch in a pint of hot rain water, and apply while still as warm as you can bear the hand in it, using an atomizer or brush to get it to the spot. It can be put on freely, allowing the liquid to run down the plant to the roots, where the bugs often are more plentiful than on the plant itself. The more force can be given to the application the better effect. About a week after the first application, it should be done again to prevent the further spread and kill any of the bugs that may have survived the first dose. Price, per can, 40 cents (postpaid).

Be sure and include a can of Bug Scorch when ordering Cacti, or send for one at once if you are troubled with mealy bug or scale. It will save you many dollars in loss of plants or appearance of fine specimens.

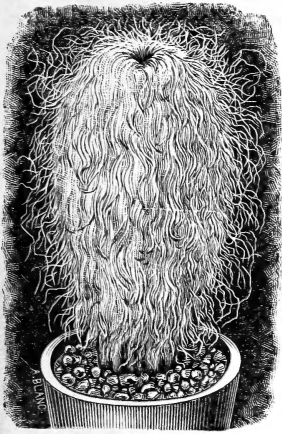
THE CALLANDER CACTUS CO., Springfield, Ohio.

Our Novelty Collection

Four of the greatest wonders of Nature
Sent Postpaid
for : : : **\$1.00**

E. HORIZONTHALONIUS (Nigger - head Cactus), very striking and bold in appearance; fine grayish green color, stout spines and beautiful pink flowers; price alone ..25c

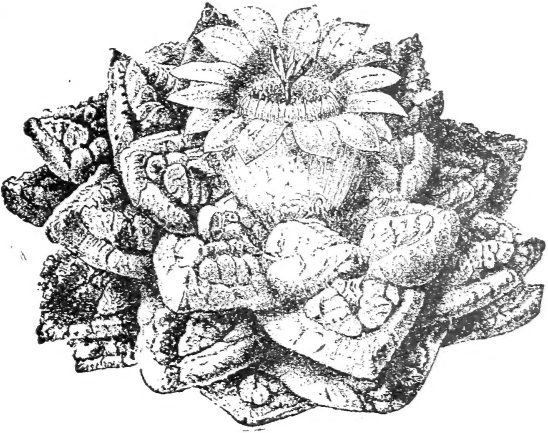
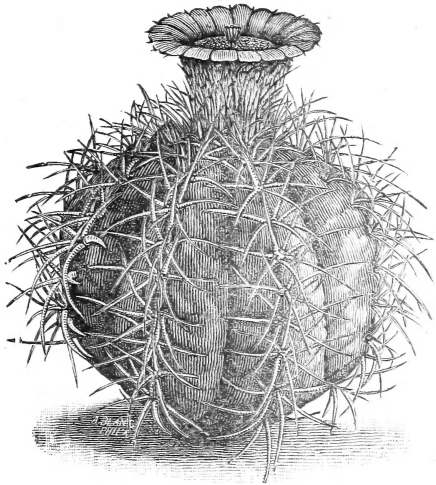
P. C. SENILIS (Old Man Cactus), the strangest freak nature ever produced in a living plant, is covered with long, snow-white hair that completely hides the plant; worth, alone, 75c



RESURRECTION PLANT. — Lay this dry ball away and forget it for years, then lay it in water and in a few hours it becomes a living, growing thing of beauty, resembling a fine rich green fern; price, alone, 15c

A. FISSURATUM (Living Rock), a worthy companion of the "Old Man." Is most strangely formed like delicately carved stone, and its greatest wonder is its handsome satiny pink flowers; price, alone, ... 25c

All
Four
sent
for
\$1.00



All four sent postpaid for \$1.00

THE CALLANDER CACTUS CO.
SPRINGFIELD, OHIO

DO YOU KNOW ANY CACTUS FANCIERS?

Almost every one who receives this circular, catalogue or book, knows a few people who treasure and care for a collection, large or small, of Cacti. We want to get acquainted with every Cactus grower in America this year, and if you will help us we will reciprocate by trying to do something for you. If, when you send us an order of any kind, even if small, you will give us the names and addresses of all the Cactus lovers in your neighborhood, we will either put in a nice extra plant, or give you better value in those you order, than you would ordinarily get at the price you send. If you are not sending us much money, make it go as far as you can by sending us some names to make your order worth more to us, and we will give you the very best value we possibly can.



Pilocereus *Senilis*
The Old Man Cactus.